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ROYAL COMMISSION OF INQUIRY INTO CERTAIN
DEATHS AT THE HOSPITAL FOR SICK CHILDREN AND
RELATED MATTERS.

Hearing held
8th floor
180 Dundas Street West
Toronto, Ontario

HASTKETT
(cont'd)

The Honourable Mr. Justice S.G.M. Grange

P.S.A. Lamek, Q.C.

E.A. Cronk

Thomas Millar

Commissioner

Counsel

Associate Counsel

Administrator

In Ch.
X Hunt.

Transcript of evidence
for

December 7, 1983

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ROYAL COMMISSION OF INQUIRY INTO CERTAIN
DEATHS AT THE HOSPITAL FOR SICK CHILDREN
AND RELATED MATTERS.

Hearing held on the 8th Floor,
180 Dundas Street West, Toronto,
Ontario, on Wednesday, the 7th
day of December, 1983.

- - - - -

THE HONOURABLE MR. JUSTICE S.G.M. GRANGE - Commissioner
THOMAS MILLAR - Administrator
MURRAY R. ELLIOT - Registrar

- - - - -

APPEARANCES:

P.S.A. LAMEK, Q.C.)	Commission Counsel
E. CRONK)	
D. HUNT)	Counsel for the Attorney
L. CECCHETTO)	General and Solicitor General
	of Ontario (Crown Attorneys
	and Coroner's Office)
I.G. SCOTT, Q.C.)	Counsel for The Hospital for
M. THOMSON)	Sick Children
R. BATTY)	
D. YOUNG	Counsel for The Metropolitan
	Toronto Police
W.N. ORTVED.	Counsel for numerous Doctors
	at The Hospital for Sick
	Children
E. MCINTYRE	Counsel for the Registered
	Nurses' Association of Ontario
	and 35 Registered Nurses at
	The Hospital for Sick Children

(Cont'd)



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APPEARANCES: (Continued)

D. BROWN	Counsel for Susan Nelles - Nurse
E. FORSTER	Counsel for Phyllis Trayner - Nurse
J.A. OLAH	Counsel for Janet Brownless - R.N.A.
B. JACKMAN	Counsel for Mrs. M. Christie - R.N.A.
S. LABOW	Counsel for Mr. & Mrs. Gosselin, Mr. & Mrs. Gionas, Mr. & Mrs. Inwood, Mr. & Mrs. Turner, Mr. & Mrs. Murphy (parents of deceased children)
F.J. SHANAHAN	Counsel for Mr. & Mrs. Dominic Lombardo (parents of deceased child Stephanie Lombardo); and Heather Dawson (mother of deceased child Amber Dawson)
W.W. TOBIAS	Counsel for Mr. & Mrs. Hines (parents of deceased child Jordan Hines)
J. SHINEHOFT	Counsel for Lorie Pacsai and Kevin Garnet (parents of deceased child Kevin Pacsai)



1 Errata and Changes by Commission Staff:

2
3 Volume 71 - Tuesday, November 29, 1983

4 Page 5578, line 14 - should read "really cannot argue
5 with them..."

6 Page 5609, line 16 - "hyperplastic" should read
7 "hypoplastic"

8 Page 5715, line 6 - should read "...10 to 25 times
9 in the animal experiments..."

10 Page 5745, line 9 - ".7" should be "7.7"

11
12 Volume 72 - Wednesday, November 30, 1983

13 Page 5774, line 21 - "outlier" should be "outside"

14 Page 5790, line 8 - "5:30 at night" should read
15 "5:30 in the morning"

16 Page 5897, line 23 - "5" should be "3"

17 Page 5920, line 19 - "inconsistent" should be
18 "consistent"

19 - "36" should be "26"

20 Page 5962, line 4-5 - "sort of a bad" should be
21 "not a bad"



INDEX OF WITNESSES

NAME

Page No.

HASTREITER, (Dr.) Alois Rudolf; Resumed

6798

Direct Examination by Mr. Lamek

6798

Examination by Mr. Hunt

6948



---Upon commencing at 10:00 a.m.

THE COMMISSIONER: Yes, Mr. Lamek.

MR. LAMEK: Thank you, sir.

DR. ALOIS RUDOLF HASTREITER, Resumed
DIRECT EXAMINATION BY MR. LAMEK: (Continued)

Q. Dr. Hastreiter, the end of the day yesterday we had been dealing with the case of Stephanie Lombardo. Can we turn now to a case which has some similarities to that, the case of Jesse Belanger. Your report of your review of that child's death is found at pages 140 to 141 of the binder. Now, you also rated this baby on the basis of your clinical review, Doctor, as having a good probability of massive digoxin overdose. You apparently considered the child's heart disease to be more severe than that of Stephanie Lombardo. You gave this baby a severity score of 8. But I take it however that on a clinical review the same elements in both cases prompted you to rate them as good probability, that is to say an abrupt onset of events leading to cardiac arrest and the unexpectedness of this death at the time that it occurred with a lack of a clear explanation as to the cause of the death. Is that fair?

A. That is correct.



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Q. Was there anything else in the case of Baby Belanger that persuaded you this was a good probability of digoxin overdose?

A. No. There is no question that the baby had a very severe type of heart problem. However, as you indicated, I felt that the baby was reasonably stable at the time and death was somewhat unexpected.

Q. Now, when the discussion of this child came around at the meeting on September 13th, 1982, and that discussion is recorded at pages 9 to 10 of Exhibit 261, you essentially stated those views.

A. Right.

Q. You said the child was somewhat sick, reasonably stable, had been transferred from the ICU to 7G and then to 4A/B, died five days after surgery, was not receiving digoxin and that you would categorize the case as good, good probability?

A. Right.

Q. And again each of the physicians at the meeting, that is to say, yourself, Drs. Fay, Tepperman, Bennett regarded this as a case of probable murder.



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3 Now, the toxicological data that you
4 had available to you consisted of measured concentra-
5 tions of digoxin in exhumed tissue, in particular,
6 liver and what was described rather generally as
muscle.

7 From Mr. Cimbura's reports, Exhibit 95E
8 at page 3 it is reported that the sample of liver
9 tissue of autopsy after exhumation contained 253
10 nanograms per gram of digoxin and the sample of
muscle contained 43 nanograms per gram of digoxin.

11 Now, that report, Dr. Hastreiter, is
12 dated September 29, 1982. As I understand it the
13 information as to Belanger's recorded levels was
14 available to you at the time of the meeting on
15 September 13th?

16 A. Yes.

17 Q. Now, that concentration in
18 the liver, the exhumed liver had been mentioned at
19 police headquarters on August 27, Exhibit 269 and,
20 in particular, on the third page. May I refer you
21 to what was said then. On the third page, the third
paragraph it is reported:

22 "Mr. Cimbura went on to discuss the
23 Belanger baby. This was a male baby,
24 1½ months, had been buried for 18
25



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3 "months. He was not embalmed and not
4 supposed to be on digoxin. Specimens
5 received were liver and muscle."

6 Liver is reported here at 453 but I assure you that
7 is a typographical error, it should be 253.

8 A. Okay.

9 Q. "...muscle 43, digoxin was
10 positive. As far as numbers go, the
11 liver level is elevated compared to
12 fresh liver tissue. Muscle is a little
13 concentrated. Digoxin had been found
14 in a child where there was not supposed
15 to be digoxin."

16 And then you are reported as having
17 said:

18 "Dr. Hastreiter said that if somebody
19 would say that a mistake was made and
20 the child received a maintenance dose
21 by mistake, one dose alone would
22 produce very low tissue levels because
23 the child is not treated with digoxin.
24 Here the concentrations are more or
25 less within the therapeutic range."

Now, in saying that the concentrations
were more or less in a therapeutic range, did you



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3 mean that they were more or less within the range
4 that you would expect to find in a child who had been
5 on a therapeutic regime of digoxin?

6 A. Yes. I think this applies
7 especially to skeletal muscle. The liver I think is
8 high, higher than what one would expect.

9 Q. All right. And again when you
10 made the comment about the level being higher than
11 one would expect to see from a single accidental
12 maintenance dose, did Mr. Cimbura challenge your
13 ability to make that statement on the basis of
14 a reading in exhumed tissue?

15 A. I don't remember that he did.
16 I don't see any indications here that he did.

17 Q. All right. Are you still
18 of the view that you are reported as having expressed
19 at the meeting of August 27th?

20 A. Yes, definitely. I think we
21 are dealing here with a baby that was not supposed to
22 have received any digoxin therapeutically and had
23 digoxin in his system. The other thing from a
24 clinical standpoint which is very important is the
25 fact that this baby had been operated on, had been
transferred back to the floor from the Intensive
Care area and the death occurred several days later,



1
2 I think five days after the operation.

3 It is very unusual for a baby to die
4 under such circumstances because either they die
5 earlier in the Intensive Care Unit or if they are
6 very sick in the Intensive Care Unit they are not
7 transferred back to the floor. So, by the time they
8 are transferred back to the floor they are usually
9 doing reasonably well and death is usually not
10 expected.

11 Q. There is evidence here, as
12 I recall, Dr. Hastreiter, there was considerable
13 pressure for space in the ICU and that this baby
14 was moved from the ICU to 7G, which was another
15 form of intensive care, perhaps rather earlier than
16 people would have wished, and eventually found his
17 way back to the floor.

18 A. Yes. He was transferred to
19 7G at first but eventually they moved him from 7G
20 to 4A/B and that again should have been an indication
21 that the baby was reasonably stable or else they
22 wouldn't have done it.

23 Q. Okay. When we get to the
24 meeting of September 13th, 1982, Exhibit 261, the
25 case of Belanger is discussed at pages 9 and 10,
and we have already referred to part of that, and



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2
3 Mr. Cimbura's report on the exhumed specimens and
4 the levels he found in them.

5 When it came to the expression of
6 opinion or vote as to the proper category for the
7 child you and each of the other physicians present
8 viewed the case as one of probable murder. I'm
9 interested in your comments. You had a plea with
10 an explanation, as it were.

11 First, you said the baby was fairly
12 stable after surgery and transferred to the regular
13 floor and died, a comment that you have just made;
14 second, he was not supposed to be receiving digoxin,
15 an important consideration; but third, mirroring
16 as I take it the comment that you had made on
17 August 27th, the level of digoxin was high in the
18 liver, could not have been an accidental maintenance
19 dose.

20 Doctor, in light of the fact that
21 this child was not embalmed and there is no evidence
22 of which we are aware the child's body having been
23 weighed after exhumation and there is therefore no
24 way of knowing what kind of fluid loss there may have
25 been from the body, what kind of dessication may have
occurred, to what measure the concentrations in
tissue may have been enhanced by dessication and how



1
2
3 confidently can you say the levels recorded in the
4 exhumed tissues could not have been achieved by a
5 single accidental maintenance dose?

6 A. As I indicated yesterday
7 I have some reservations about trying to quantitate
8 levels in fixed tissue as well as exhumed tissues.
9 However, I think it would be extremely unlikely and
10 almost impossible for a level of this magnitude to be
11 explained in any other way. I am really sorry that
12 these bodies when they were exhumed were not weighed
13 because weighing the bodies would have given us
14 an indication of the loss of fluid water from the
15 system and the amount of concentration that may have
16 occurred for drugs such as digoxin in the body.

17 Q. Yes.

18 A. But I don't see, even, let
19 us say, the maintenance digoxin dose had been given
20 shortly before the baby's death and this is where you
21 would have the highest concentration in tissue, of
22 course it is also eliminated from tissue if it had
23 been given earlier.

24 Q. Yes.

25 A. It would have been eliminated
and the half time would be approximately the same
as blood, although, one cannot deduce one from the



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Hastreiter, dr.ex. 6806
(Lamek)

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other. But they have been measured separately and
have been found to be of approximately the same
magnitude. So, it would be like a day and a half.
So, every day and a half the level would be cut
into half of its original magnitude.



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A. I just don't see first of all that one single maintenance dose, the level would have been very low to begin with. If one or two, or three days had passed since this was given it would be even lower and it would be just very, very difficult to explain. A concentration factor of 10 or 20 times what it should have been, what it would have been expected to be had a maintenance dose been given.

Q. Dr. Hastreiter, I am not aware of the slightest bit of evidence to suggest that any such dose was given, but I suppose one must contemplate the possibility. What if the child had received, by accident, a loading dose of digoxin, could you have been so confident in your view that these levels were greater than you would expect to find in that event?

A. No, I would not. I think it is just very difficult to give a loading dose by accident. Usually when a child is loaded the loading dose is divided into the three aliquots.

Q. Yes.

A. And they are given three different times. Very rarely would a total loading dose have been given at once.



1
2 I find it very difficult from a
3 practical standpoint to have this type of mistake
4 made, but I would be unable to separate it from a
5 therapeutic situation.

6 Q. When you refer to a "loading
7 dose" you mean the aggregate of the normal three
8 administrations at the outset of a course of treat-
ment.

9 A. Total loading dose, right.

10 Q. Now, it has been my impression,
11 and perhaps I am wrong, but it has been my impression
12 that each one of the three installments of the loading
13 dose itself tends to be larger than the subsequent
maintenance dose that is administered.

14 A. That is true, because the first
15 loading dose is usually one-half of the total calcu-
16 lated. The second one and the third are one-fourth.
17 The maintenance dose is usually one-eighth of the total
18 loading dose, so it is more. The loading dose, even
19 the aliquots are higher than the regular maintenance
20 dose. So if you asked me would it be possible that
21 just one of these doses had been given, I would say
22 again the probability -- I would say with some confi-
23 dence that this would be difficult to explain on the
24 basis of the tissue concentration.
25



1
2 Q. And even if the first of the
3 three segments of the loading dose amounting to
4 one-half of the total had been given to this child
5 by accident, you would still have some difficulty
6 reconciling the tissue levels with the administration
7 of such a dose.

8 A. I would.

9 Q. I take it, Doctor, from
10 everything that you have said that it is still your
11 opinion that the probable cause of Belanger's death
12 was digoxin intoxication resulting from an unprescribed
13 dose of digoxin?

14 A. Yes.

15 Q. I want to look now, Dr.
16 Hastreiter, at a few additional children of whom it
17 was your opinion, based on a review of their clinical
18 records, that there was a good or fair probability
19 of massive digoxin overdose, and first the good
20 probability group. In addition to those that we have
21 already discussed, as I view the count, they are
22 Babies Taylor, Shrum, Gage, Onofre, MacDonald,
23 Gosselin and Woodcock.

24 THE COMMISSIONER: These are found,
25 where are they -- this is your own compilation, I take
it?



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2

MR. LAMEK: My own compilation, yes.

3

THE COMMISSIONER: Could you give it

4

to me again?

5

MR. LAMEK: Taylor, Shrum, Gage,

6

Onofre, MacDonald, Gosselin and Woodcock.

7

Q. And of those seven there are

8

toxicological data about only three and that as we

9

will see of rather dubious value, Gage, Onofre and

10

Woodcock.

11

I think we might be able to deal with

12

these fairly quickly, Dr. Hastreiter. In the case of

13

Taylor, it appears that you did not review this chart

14

until the summer of 1982.

15

A. Could you tell me what page

16

this would be on?

17

Q. 95, I believe, 95, David

18

Taylor. I am not aware of you having reviewed this

19

chart during 1981, Doctor.

20

A. No, I don't believe I did.

21

Q. You apparently regarded the

22

child as having very severe cardiac problems, you

23

scored him eight on your severity scoring.

24

A. Right.

25

Q. And notwithstanding that, and

I say notwithstanding that because that scoring



1
2 presumably puts him at some risk, you rated him as
3 being good in terms of probability of massive digoxin
4 overdose.

5 A. Right.

6 Q. And there are no toxicological
7 data on this child. At the meeting of September 13th,
8 Exhibit 261 at Page 12, when it came time for what is
9 called the vote you categorized the child's death as
suspicious with the comment:

10 "This was a baby with severe aortic
11 stenosis; could die suddenly."

12 And I ask you in light of that com-
13 ment:

14 "Baby with severe aortic stenosis;
15 could die suddenly."

16 On what basis you had ranked him a good probability of
17 overdose? He was severely ill and the kind of
18 problem that could cause his sudden death, why did
19 you regard him as good probability of digoxin over-
dose?

20 A. Okay. So this baby was
21 approximately three months old; had severe aortic
22 stenosis, and this is a very serious lesion. It is
23 also one of the few types of congenital heart defects
24 that could cause sudden death, unexpected death, perhaps.
25



1
2 However, in my notes here I say that
3 the infant had improved a little following admission
4 to the hospital; David died two days following his
5 admission to the Hospital for Sick Children. So he had
6 improved a little and appeared to be improving when the
7 terminal episode occurred.

8 So even though aortic stenosis can
9 produce sudden and sometimes even unexpected death,
10 the probability that death is totally unexpected is
11 small. Usually this occurs in a baby who is already
12 having problems with deterioration clinically, going
13 down hill and then dies. So I felt that the circum-
14 stances surrounding this baby's death was such that
15 they warranted placing him in the good category for
16 further evaluation. We had no toxicological data,
17 so we don't have any additional information.

18 Q. I must say I am a little con-
19 fused by the answer you have just given, Doctor.
20 On the one hand you said that children with severe
21 aortic stenosis may die, not only suddenly but un-
22 expectedly, and I appreciate there may be a distinction
23 between those two; but then you seem to say where they
24 die unexpectedly it is where they have been having a
25 course of deterioration and I would not have thought
death was that unexpected in that context. I would



1
2 have thought death was unexpected where, as here, the
3 child has apparently been stable for a while. I am
4 not quite sure that I understand the distinction you
5 are drawing.

6 A. Maybe I can explain that a little
7 bit better. Aortic stenosis is one of the very rare
8 situations relating to congenital heart problems where
9 you will ever hear that a child, or a baby died
10 suddenly. Most children with other types of heart
11 disease will die gradually, more gradually, okay,
12 so that I think is the first explanation.
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That sudden death, especially unexpected death, is very rare still in the aortic -- even though in the presence of aortic stenosis. So the probability is already not that high that this would occur with any baby with aortic stenosis.

Q. Yes.

A. There is also a difference between older children and babies. Babies with aortic stenosis usually develop -- tend to develop signs of heart failure and it becomes sort of a chronic situation more so than in older children.

Older children may sometimes have no symptoms whatsoever and then have sudden chest pain or syncope and die. That can happen, but not in babies.

The course in babies is usually one where they do deteriorate gradually and then there may or may not be a superimposed more sudden deterioration and death. So this is the basis for my conclusions.

Q. Yes.

A. It is a method, of course, of probabilities. One can never be sure in a situation like this, but I thought at the time and I feel now that we should have looked further into this situation.



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Q. If I were to express it this way for the purpose of my understanding, can you tell me if I have grasped the substance of what you are saying, Dr. Hastreiter.

In the case of a child with severe aortic stenosis that child has a lesion from which sudden death may result. That is to say when that death does come it is not going to be a sort of long lingering event. It may well occur very rapidly.

A. It may.

Q. Yes.

A. But it is not the usual situation in little babies.

Q. But it may and aortic stenosis is one of the conditions in which that may happen?

A. Right.

Q. Okay. The fact that something --

THE COMMISSIONER: Aortic stenosis is one -- I understood from you it is one of the few --

THE WITNESS: One of the very few, yes.

THE COMMISSIONER: And if you look at the charts of all these children, would there have been any others -- I don't know how many. Of course, I can't keep track and for all I know there may have been many others with aortic stenosis. Do you remember



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that offhand?

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THE WITNESS: I think there may have

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been one other but --

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THE COMMISSIONER: Were there any

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other diseases that you can remember and you won't be

7

held to this that were put in the same category as

8

aortic stenosis for that purpose?

9

THE WITNESS: Yes, there is hypo-

10

plastic left ventricle which is somewhat related to

11

aortic stenosis also called aortic atresia, and there

12

THE COMMISSIONER: And they also are

13

subject perhaps rarely to sudden death. Is that right?

14

THE WITNESS: No, they are in fact --

15

fairly frequently they die suddenly, but they don't

16

live very long. These babies only live a few days

17

MR. LAMEK: Q. Perreault, for

18

example, was a child with hypoplastic left heart,

19

aortic atresia and so on.

20

A. These babies are expected to

21

die very early, yes.

22

And then there is a group with

23

anomalous left coronary artery, anomalous origin of the

24

left coronary artery, and I think there was one baby

25



C4 1
2 in the group — I don't remember the name now — with
3 this diagnosis.

4 There are occasional situations of
5 extremely severe pulmonary stenosis, usually with an
6 intact ventricular septum, that is isolated pulmonary
7 stenosis, where they can die suddenly. That is very
8 rare, though.

9 Then there are -- there is a group
10 of so-called cardiomyopathies, that is the primary
11 disease of the heart muscle. The heart is structurally
12 normal but there is disease of the heart muscle.

13 THE COMMISSIONER: And that is called
14 cardio...?

15 THE WITNESS: ...myopathy, and this
16 child --

17 THE COMMISSIONER: I don't want to
18 necessarily prolong the doctor's stay here but I would be
19 interested in knowing which of any of the children
20 that he did look at were subject, whether often or
21 rarely, to sudden death, of the diseases that they
22 were suffering because it would help us when we are
23 looking at the terminal events.

24 THE WITNESS: I should say, though,
25 that the babies that we are dealing with, the group of
babies that we are dealing with were mostly very sick



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babies who were already chronically ill, and this
concept perhaps does not apply, at least not as purely

THE COMMISSIONER: Not as much?

THE WITNESS: Not as much.

THE COMMISSIONER: Throughout the
charts we see always or almost always sudden arrest --

THE WITNESS: Yes.

THE COMMISSIONER: -- of the child.
If that is unusual in the heart disease that would
perhaps be something that would lead to a classifica-
tion of the death as suspicious, but if it is not
unusual it would not.

THE WITNESS: Well, maybe I should
explain this even a little better.

I should say that these lesions
that I just indicated to you that produce sudden
unexpected death may produce these symptoms acutely
in a child that is doing well. One would not expect
this to happen sometimes. Whereas the group of
babies we are dealing here with had a terminal
sudden deterioration but they were already sick, and
this is not uncommon.

I think that is a mode of death of
many babies with many types of heart disease.

THE COMMISSIONER: It seems to have



C6

1
2 been one of the things in the case of the Taylor baby
3 that persuaded you there was a good chance of digoxin
4 intoxication, the fact that the baby died suddenly,
5 was it not?

6 THE WITNESS: Died suddenly when the
7 baby appeared to be stable or improving.

8 THE COMMISSIONER: If he had merely
9 died suddenly and had not appeared to be stable or at
10 least had had symptoms of something or other, perhaps
11 not very serious each day, then it would not have
12 affected you that way I take it?

13 THE WITNESS: Right. If he had gone
14 downhill earlier and then suddenly deteriorated, that
15 is the common situation. That is the way babies
16 usually die, especially small babies with heart
17 disease.

18 MR. LAMEK: Q. Dr. Hastreiter, I think
19 it is important to understand this matter. In terms of
20 suddenness now - I am not talking about unexpectedness.

21 A. Yes.

22 Q. In terms of suddenness, that is
23 to say the sudden onset of a terminal event, very
24 rapid decline and death shortly after it ensuing,
25 following up for a moment what the Commissioner asked
you, I take it that suddenness per se was something that



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attracted your attention in these charts because you referred over and over in your report to the abruptness of the terminal episode?

A. Yes, especially when it is isolated.

Q. Yes.

A. Yes. If you have a baby that is already going down and then has sort of an acute insult --

Q. Yes.

A. -- you know, that could be suspicious to a lower degree.

Q. Yes.

A. But when a baby is doing well and then suddenly deteriorates or is improving and suddenly deteriorates, I think there is a difference.

Q. Yes, but now you are incorporating the second element to the unexpectedness, are you not? Let's just stay with suddenness for a moment. Even the abruptness itself seemed to attract your attention. It may be that upon looking at it you decided that suddenness itself was not sufficient cause for suspicion in all the circumstances. But the very fact of abrupt onset of terminal episodes seems from your report to have attracted your attention.



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You have remarked upon it. Is that fair?

3

A. That is fair.

4

Q. Then the question becomes

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whether that abrupt episode was one that was to be

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expected or not, and if as you said it followed a

7

declining course, if the child was clearly deteriorating

8

from the chart, then the suddenness of the final

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event becomes a matter of much less concern I take it?

10

A. Right.

11

Q. But if there is suddenness

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combined with what you believe is unexpectedness, that

13

is to say nothing in the period preceding the onset of

the terminal events gives you reason to expect that

14

it is about to happen?

A. Right.

15

Q. Then it becomes an unexpected

16

and sudden event and gives rise to a level of suspicion

17

in your mind?

18

A. To a higher level of suspicion,

19

yes.

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Q. Yes.

21

A. I think the suddenness per se

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helps, but I am sure you heard other testimony here

about the way babies die.

23

Q. Sure.

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A. And that they die from other conditions, and it is not infrequent for them to have a sudden final episode, whether they are hypoxic or lose blood or have heart failure or an arrhythmia.

Q. Okay. And therefore when, in the meeting of September 13th you said of David Taylor that his lesion was one which could produce his sudden death, it wasn't the suddenness of the death that caused you the level of suspicion necessary to call it a suspicious death, it was rather the unexpectedness in the clinical setting in which it occurred.

A. I would say the suddenness combined with the unexpectedness really becomes a more powerful indication or marker.

Q. Yes.

A. I should indicate again the group that I listed just a few minutes ago saying that in these groups sudden deaths is more prone to occur. I should explain that. Sudden deaths in these groups may occur without any previous symptoms. The child may be doing well and, poomp, suddenly die, and this is what I was really referring to, okay.

Q. Dr. Hastreiter, are you



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still of the view that the circumstances of David Taylor's dying and the manner of his dying give rise to a suspicion that digoxin was involved in the death?

A. Yes.

Q. Okay. And would you still, on the basis of the clinical information, regard it as a good possibility that the child died as a result of digoxin overdose?

A. Yes.

Q. And next on the list is Dion Shrum. Again, we are lacking any toxicological information here. Again we report apparently speaking of a severely ill child. You rate the severity as 8 on your scale of 1 to 10.

A. What page is that, please?

Q. Shrum is - now that we have an index we can find it very quickly - page 106. You remember, Doctor, this was a child who died approximately three hours after returning from the catheterization lab. He had had a couple of episodes of bradycardia in the cath lab. Can you tell me what in this child's clinical picture qualified him for a good probability rating?

A. Yes. He was almost three months old and had a total anomalous pulmonary venous



D3 1
2 connection. That is a very severe lesion. He had
3 a cardiac catheterization performed on the day after
4 his admission to the Hospital in the morning and a
5 balloon atrial septostomy was done. The atrial
6 septum was ruptured to allow improved mixing of
7 blood or improved supply of blood to his systemic
8 circulation.

9 In the cardiac catheterization lab
10 the baby had two episodes of bradycardia. That's
11 not terribly unusual for little babies who undergo
12 this procedure, cardiac catheterization, because
13 the manipulation of the catheter inside the heart
14 can do this, plus the fact that perhaps the baby
15 was somewhat hypoxic and was already quite sick at
16 the time, that contributes to it.

17 Q. I take it on that point,
18 Dr. Hastreiter, you are not suggesting any possible
19 connection between those episodes of bradycardia
20 and some prior digoxin problem.

21 A. No, I'm not.

22 Q. All right, thank you.

23 A. Now, three hours following
24 the cardiac -- no, I should start with the immediate
25 post cardiac catheterization period. Following
his return to the ward the child became progressively



D4

1
2 more tachypneic and had increased respiratory
3 distress. Now, that is an indication that the baby
4 is going downhill, is deteriorating, no question
5 about that. Three hours following the procedure
6 the baby developed an irregular heart rhythm and
7 was found to have complete heart block. Now, that
8 I find hard, difficult to explain because heart
9 block is not uncommon following a cardiac catheteriza-
10 tion but it occurs immediately. It is related
11 usually to manipulation of the catheter inside the
12 heart hitting the AV conduction system and damaging
13 it temporarily producing the heart block. It would
14 be somewhat unusual to expect heart block to occur
15 several hours later and I have no explanation for
16 that.

17 Shortly thereafter the baby developed
18 a pulmonary arrest and could not be resuscitated.
19 I have another note here saying that return from
20 the laboratory at 16 hours, and then at 1845
21 developed a complete heart block. At 19 hours had
22 a seizure, became very bradycardic with a heart rate
23 of 50 and an arrest was called and he was pronounced
24 dead at 1945 hours. I think that this was a very
25 sick baby, unquestionably.

Problems such as this following a



1
2 cardiac catheterization are not very unusual, they
3 occur in a sick baby. However, the type of problems
4 that the baby had, namely, complete heart block,
5 this arrhythmia developing suddenly several hours
6 later, I think has to be looked into. That was my
7 feeling.

8 Q. And indeed the good probability
9 rating that you gave him, as I understood what you
10 have told us so far, really means that we have got
11 to look into this one.

12 A. Right.

13 Q. This is one to look into.

14 A. This is all it means, really.

15 Q. Because there may be unexplained
16 matters in the clinical picture that could be the
17 product of digoxin toxicity.

18 A. Yes. This rating, the good
19 rating indicates exactly that, that we should pursue
20 this because it is something possibly unexplained.

21 Q. Yes.

22 A. The fair rating, all it means
23 is that we cannot totally exclude this baby because
24 there may still be a small element of suspicion
25 there.

Q. Now, the meeting of September



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2
3 13th on page 11 of Exhibit 261, your index of
4 suspicion was apparently a little higher than that
5 of your physician colleagues. You regard this as
6 a suspicious death, Dr. Fay didn't regard it as
7 very suspicious and Drs. Bennett and Tepperman
8 regarded it as low suspicious. But I take it there
9 is not a great deal of territory between those
different views, is there?

10 A. I don't think so.

11 Q. No.

12 A. But it shows that this was
13 sort of an almost borderline situation.

14 Q. Are you able to form any
15 judgment other than that which you formed and
16 expressed back in 1982 about this child, Dr. Hastreiter.
There is no toxicological information.

17 A. No, because I have no
18 additional information.

19 Q. You still regard it as one
20 where there has to be a suspicion of digoxin
involvement?

21 A. Yes.

22 Q. All right. Brian Gage is
23 the next child and him we find at page 117.

24 I confess, Dr. Hastreiter, I am not
25



1
2
3 at all clear about your clinical assessment of how
4 sick this baby was. You gave him a severity score
5 of 6, which doesn't sound terribly horrendous, but
6 at the meeting of September the 13th, Exhibit 261
7 on page 10 you are reported as saying that this was
8 a blue baby, very sick, and you say:

9 "...it is one of these controversial
10 situations where the infant could
11 have died naturally,..."

12 Which I rather read to mean the death could have
13 been caused by his clinical condition.

14 Now, am I having some failure of
15 perception in seeing some sort of conflict between
16 your statement "Blue baby, very sick", "could have
17 died naturally" and you gave him a severity rating
18 of 6.

19 A. Well, I think perhaps I
20 should explain that for the severity rating of the
21 lesion one has to take into consideration the
22 fact that this is a fixable lesion. It is a lesion
23 where the prognosis is actually pretty good, you
24 know, if the baby survives the initial episode of
25 surgery and so forth.

Q. Yes.

A. But the ultimate prognosis is



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3 good. This was part of my basis for grading the
4 baby. The baby was sick, there is no question about
5 it.

6 Q. Okay. So, what we have been
7 calling a severity rating is a bit of a combined
8 severity and prognosis with treatment rating.

9 A. Right.

10 Q. Okay, that has helped me
11 to understand what looked like a disparity.

12 What was there about this child's
13 clinical picture that caused you to rate his
14 death as a good probability of massive digoxin
15 overdose?

16 A. Okay. This baby was about
17 a week old when he was first admitted to the
18 Hospital and he had a cardiac catheterization shortly
19 thereafter, had a balloon septostomy again. Now,
20 this time the septostomy is done for improved mixing
21 of the blood because the baby was probably very
22 cyanotic, we know that he was because we have the
23 blood gases here pO_2 of 24, that is very low, was a
24 little ascidotic too, pH 7.23. He was given a
25 prostaglandin infusion which helps these babies.
It is a little controversial but it often helps.

The infant was then started digoxin



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2 and aldactazide. Oh, following the catheterization
3 the baby developed an acute tubular necrosis. That
4 is a serious problem, that is an acute injury to the
5 kidney and sometimes can be fatal. However, the
6 indications are that the baby recovered from that
7 and improved. In fact, they scheduled surgery for
8 25 days, or 20 days later, I forget exactly. I
9 think he was scheduled - yes, for the 25th and
10 the cardiac catheterization had been done on the
11 5th.

12 So, they could not have scheduled him
13 shortly or immediately after the catheterization
14 because of the renal problem. So, they would have
15 to wait until that problem cleared. This could
16 probably take a week or even two weeks sometimes.

17 Q. Yes.

18 A. But the fact that they
19 scheduled the baby for so much later I believe is
20 an indication that the baby was reasonably stable
21 or else they would not have waited, unless the baby
22 was so sick.

23 Q. Was so sick they couldn't
24 operate on him.

25 A. Yes, they couldn't take him
to the operating room. This is perhaps something



1
2 that may be -- could we look at the baby's chart,
3 please.

4 Q. Yes, of course.

5 THE COMMISSIONER: This is Brian
6 Gage?

7 MR. LAMEK: We are looking at Gage,
8 yes.

9 THE WITNESS: While we are waiting
10 for the chart I could perhaps just proceed with my
11 notes here.

12 So, the baby had, on the day of his
13 demise, the baby had an episode of vomiting associated
14 with bradycardia, decreased respiratory rate and
15 vascular collapse and then this is followed by arrest
16 and death. The time of the terminal episode was
17 3:20 and the baby died at 4 o'clock. The autopsy
18 was not very revealing, there was no obvious cause
19 of death. There was a small infraction of the
20 papillary muscle, but I don't think that accounts
21 for the baby's death. The pathologist felt that
22 death was probably related to hypoxemia, that is,
23 lack of oxygen in the blood, and that is basically
24 the situation.

25 Let me just look in the chart here
for a second.



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A. I think the indications are that this baby, following the cardiac catheterization procedure, the baby had this acute episode of renal failure. I don't know what they call acute tubular necrosis, but recovered, this is described as a transient episode in several cases.

The baby remained quite cyanotic, that means that the balloon septostomy really did not produce the result that one would like to see, and that happens sometimes, and for this reason the baby would require further surgery.

The baby also had problems with feeding; had heart failure; vomiting; and other problems, but it doesn't appear that any of these problems were really life threatening until this terminal episode occurred.

Q. Dr. Hastreiter, maybe we can't place too much emphasis on the interval that occurred between the catheterization and the proposed surgery. If you look at the discharge report on Page 17 of the chart, it appears from the final paragraph:

"While the child was on the floor, over a period of approximately 20 days, it became apparent that the child's balloon atrial septostomy was not



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2 sufficient in that he required a
3 Blalock-Hanlon atrial septectomy
4 to increase his arterial saturation."

5 So some time within that 20 day period
6 that realization dawned; and if you look at Page 83,
7 which is the nursing department's pre-operative check-
8 list, there is a rather interesting notation:

9 "Space became available for surgery,
10 so parents were notified last evening
11 that their baby would be operated on."

12 It may therefore have been that the surgery was
13 scheduled on fairly short notice and they grabbed
14 the first available opportunity in the OR.

15 A. Yes, but that should not take
16 more than a few days.

17 Q. No. I guess what I am suggesting,
18 though, is that one cannot assume that the period from
19 September 5 to September 25 suggests that he was
20 viewed by the hospital staff as being in no urgent
21 need of the surgery, it didn't become apparent until
22 some time within that period that they should conduct
23 surgery, and then they seemed to have seized the first
24 available day in the OR. I don't think there is any-
25 thing that hugely turns upon it, I am just not sure
that we can place any particular emphasis on it as



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indicating stability, that's all.

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A. Yes. But you see, the usual procedure for the balloon septostomy, the balloon septostomy is performed to increase the oxygenation of the blood.

Q. Yes.

A. And so immediately after the balloon septostomy you measure the PO₂'s in the blood, and if they are below a certain level that you are concerned about, then you think of surgery.

Q. You know you have to do something else.

A. It doesn't take that long to realize that.

Q. I take it though that your rating of this child as showing a good probability of digoxin overdose was essentially that although he was sick, was a blue baby and so on, he did not appear at the time that he died at imminent risk of dying.

A. Yes, that was my feeling.

Q. And that and his death in that context called for an explanation which did not appear from the chart, I take it.

A. Right.



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2 Q. Now, we know there were rather
3 sparse toxicological data that eventually became
4 available on this child from his exhumed tissues,
5 and they are found in Exhibit 95D at Page 4.

6 "Essentially (something called)
7 muscle reported to be right and left
8 thigh muscle; there was a trace of
9 some digoxin like substance (for NG/G)."
10 THE COMMISSIONER: I'm sorry, you said
11 95E, was it?

12 MR. LAMEK: I am sorry.

13 THE COMMISSIONER: 95 and the letter,
14 please?

15 MR. LAMEK: D, D as in Donald.

16 THE COMMISSIONER: My D there is only
17 one page.

18 MR. LAMEK: I'm sorry, E, you're
19 absolutely right, E as in egregious or E as in
20 error, Page 4.

21 Q. The muscle tissue very revealing
22 in terms of concentrations; the three samples of
23 material from large bowel of solid material and
24 fluid and contents of small intestine are reported
25 as total digoxin in the material. Then there is
something that is reported to be serum, taken just



1
2 prior to August 11th, which would be a couple of weeks
3 prior to the death, I am sorry, some considerable time
4 prior to death and that contained 1.6 nanograms per
5 millilitre of some digoxin like substance.

6 I take it that those results were of
7 little or no help in assessing this case, Dr. Hastreiter?

8 A. That is true.

9 Q. And so at the end of the day
10 does your rating of "good probability" have any
11 base other than the somewhat unexpected timing of the
12 death?

13 A. No, that is basically it.

14 Q. At the meeting on September
15 the 13th, at Page 10 over on to Page 11, again your
16 index of suspicion appears to have been a little
17 higher than that of your colleagues, suspicious death
18 as opposed to low suspicious, and in Dr. Tepperman's
19 case minimum suspicion.

20 A. Right.

21 Q. You are still of the view,
22 Dr. Hastreiter, that this was a death in which you
23 had to suspect the possibility of overdose of
24 digoxin?

25 A. Yes.

Q. Can we move on to John Onofrey,



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2 please. Here a child with a severity rating of
3 5. There is some small toxicological information
4 that I will come to in a moment, and you rated
5 Onofrey as having a good probability again, Page 130.

6 "Good probability of digoxin overdose."
7 And again your index of suspicion appears to have been
8 a little higher than that of your colleagues. At the
9 meeting of September 13th, Pages 12 to 13 of the
10 minutes, your opinion was, "probable murder." The
11 others were, "suspicious death", other than Dr.
12 Tepperman who thought, "highly suspicious death"
came a bit close to you.

13 A. Yes, that is true.

14 Q. What is there about this child
15 that prompted that high level of suspicion on your
part?

16 A. On clinical grounds.

17 Q. On clinical grounds first.

18 A. Okay. This baby was about
19 two and a half weeks old at the time of his death,
20 but he had been admitted at one day of age and he
21 had a cardiac catheterization shortly following, I
22 think on the day following his admission, which re-
23 vealed that he had a severe, extreme type of
24 tetralogy of Fallot, that is, a large ventricular
25



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2 septal defect, and pulmonary atresia, complete
3 atresia; the pulmonary artery outlet was completely
4 closed off and the pulmonary arteries were small, the
5 branches. So basically that was the lesion, it is
6 a very severe lesion.

7 He was given a prostaglandin infusion
8 and was operated on on the 24th, that is two days
9 following his admission to the hospital. He had
10 a shunt operation performed, a right sided
11 Blalock-Taussig. The post-operative course was
12 characterized by some irregular ectopic beats. He was
13 digitalized but the digoxin was later stopped. On
14 6.12, that is about two weeks following his operation
15 the baby developed possible renal necrotizing
16 enterocolitis and was treated as such with nothing
17 by mouth, antibiotics, etc. He remained stable,
18 relatively stable, had a slow and variable heart rate
19 which ranged from 42 to 100 per minute, the 40 is
20 certainly a little bit slow. But then he arrested
21 rather suddenly on the 12th at 3:20 a.m. and died
22 at 4:10. He also had when the diagnosis of necro-
23 tizing enterocolitis, when this was made, a small
24 gastrointestinal hemorrhage, he was bleeding a little
25 bit from the GI tract.

Let's see, an autopsy was performed



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2 confirming the diagnosis and it showed no other
3 reasons for his death. In other words, the child's
4 main problem following his operation really had been
5 the GI problem rather than the heart. He had been
6 relatively stable from a cardiac standpoint except
7 for this arrhythmia which was not considered a very
8 serious problem. Then he deteriorated rather
9 suddenly, several weeks, about two and a half weeks
10 later and died. This was the reason for my grading
11 him as a good possibility, good probability.
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Q. Did you, doctor, in your review of this chart look at the final autopsy report that was contained in it?

A. I am sure I did but maybe I should look at it again.

Q. Perhaps you could refer to just a couple of things in it, please.

THE COMMISSIONER: Which one is this?

MR. LAMEK: This is the Onofre chart.

MR. SCOTT: Mr. Commissioner, I wonder if before the break I could get an opportunity to raise a housekeeping matter?

THE COMMISSIONER: Yes.

MR. SCOTT: Not now, but if you would just keep it in mind for either before the break or shortly after.

THE COMMISSIONER: Yes. Well, I will do my best but if we forget will you remind us again?

This is something you want to do openly I take it?

MR. SCOTT: Yes.

THE COMMISSIONER: Why not do it now and then we won't forget.

MR. SCOTT: All right. I am not certain whether Dr. Hastreiter has read the evidence of



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Dr. Rowe and the other doctors at the Hospital who
treated these babies. I presume he has not.

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THE WITNESS: No, I have not.

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MR. SCOTT: I think out of convenience,
and I don't know precisely how long the list of babies is
that we are going through, but there are obviously
going to be ten or twelve or fifteen that he will have
dealt with by the end of this exercise.

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Before I cross-examine, and in order
to make it as short as possible, I would like to
arrange a way in which Dr. Hastreiter could read that
evidence instead of my having to read it to him, which
would keep me here cross-examining for four days.

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THE COMMISSIONER: It would take --
I am afraid it would take Dr. Hastreiter quite a while
to read the evidence of Dr. Rowe and all of that
because he was in something like 16 days.

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MR. SCOTT: It will -- well, you
know, it depends on how many babies, but I am going to
have to ask him...

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THE COMMISSIONER: Could you perhaps
indicate which ones you have most in mind?

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MR. SCOTT: I can produce, but it will
take him some time to read that, a note of where the
evidence is and a summary of it.



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THE COMMISSIONER: We can do --

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MR. SCOTT: What I am going to consider asking him is to what extent he differs, if at all, with Dr. Rowe's opinion, and therefore I want him to be certain he understands the evidence that Dr. Rowe gave.

It is a practical dilemma that can be resolved in some fashion.

THE COMMISSIONER: Well, I don't know. I don't know whether it is possible. I don't know whether it is physically possible for Dr. Hastreiter to read Dr. Rowe's evidence --

MR. SCOTT: He won't have to read it all.

THE COMMISSIONER: No.

MR. SCOTT: I am not even asking him to read the cross-examination particularly. If we can decide the babies that he is going to deal with, I think I can sense who they are from this meeting of September 13th, then if he can read Dr. Rowe's evidence because I really would like him to say, I disagree with Dr. Rowe about that or I agree with him, or I share his concern but I focus on this rather than that, because the evidence that you have is not going to be of much assistance to you if the issues aren't joined



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in that fashion. ()

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THE COMMISSIONER: Well, doctor, we
are talking about your time now --

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MR. SCOTT: Therefore I would ask you
either to have that done or to defer his cross-
examination until it could be done.

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THE WITNESS: I will be glad to do it.
I think probably --

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MR. SCOTT: Just be careful before
you say. You haven't seen --

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MR. LAMEK: Dr. Rowe was here for
six weeks.

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THE WITNESS: No, I understand.
Maybe there is a way of maybe selecting specific
portions.

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THE COMMISSIONER: Mr. Ortved, have
you a solution?

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MR. ORTVED: I will let Dr.
Hastreiter finish.

19

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THE WITNESS: I think it would help
me also in knowing what Dr. Rowe had to say.

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MR. ORTVED: Well, Mr. Commissioner,
I share Mr. Scott's concern and if he had not risen
I probably would have. I think what we should do is
probably put together a compendium for Dr. Hastreiter



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of those cases that Mr. Lamek will touch that will consolidate Dr. Rowe's evidence, to make it quite simple for him to review.

THE COMMISSIONER: The problem might be solved as far as time is concerned because I think Dr. Hastreiter has already been warned of the possibility of coming back next week, has he not?

MR. LAMEK: We have already discussed that.

THE COMMISSIONER: I don't think there is any way of avoiding that, Dr. Hastreiter, and it is quite possible that you and Mr. Scott will not be reached by tomorrow afternoon. It is quite possible that some of the others --

MR. ORTVED: Especially bearing in mind that we are not sitting for a full day today.

THE COMMISSIONER: That is right.

MR. ORTVED: But I think if we were to put together that compendium of Dr. Rowe's evidence vis-a-vis those cases, his evidence in chief, then I think the matter could be considerably shortened.

THE COMMISSIONER: Well, all right. Work on it and we will see what the situation is.

MR. SCOTT: Another point, isn't the swearing in tomorrow?



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F6 2 THE COMMISSIONER: Is it tomorrow?
3 It is not today?
4 MR. LAMEK: Don't go today.
5 MR. SCOTT: I mean there may be one
6 every day.
7 THE COMMISSIONER: There may well
8 be another one Friday. I guess there is only one and
9 it is tomorrow. I had Wednesday fixed in my mind.
10 MR. LAMEK: It is the 8th, I promise
11 you.
12 MR. SCOTT: I hope the Commissioner
13 will watch that there isn't a swearing in for the
14 Court of Appeal seats.
15 THE COMMISSIONER: Yes. Well, I think
16 it is likely to take place. I get frostier and
17 frostier looks every time I go over there.
18 Can you give us any indication --
19 Miss Forster, are you cross-examining
20 in this instance?
21 MR. FORSTER: Yes, I am. I think
22 possibly an hour.
23 THE COMMISSIONER: An hour?
24 And how long do you think you will
25 be, Mr. Hunt?
MR. HUNT: I would think somewhere in



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the neighbourhood of half an hour, 45 minutes.

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THE COMMISSIONER: Mr. Brown?

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MR. BROWN: I will be about the

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same; no more.

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MR. YOUNG: I would expect to be no
more than 45 minutes.

7

THE COMMISSIONER: Are you ready to
go, Miss McIntyre, or would you be ready?

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MS. MCINTYRE: Since I was not here
yesterday, Mr. Commissioner, I was going to ask to
defer until tomorrow so I could have an opportunity
to read the transcript.

10

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THE COMMISSIONER: Well, I don't
think we will have much trouble fixing that.

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How long do you think you will be?

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MR. LAMEK: I will be through
shortly after the break this morning.

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THE COMMISSIONER: Yes. Well, I
doubt if we will have a problem about either of you
gentlemen being reached today. It might be tomorrow,
but perhaps we can put the parents on and keep you
out of action until next week, which will solve that
problem.

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But anything that you can produce
apparently, doctor, or do the best you can.

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THE WITNESS: I will be very glad to
do it.

THE COMMISSIONER: All right.

Yes, Mr. Lamek.

MR. LAMEK: Q. Dr. Hastreiter,
I just ask you to turn to the final autopsy report
in the Onofre chart, page 32.

A. I'm sorry, page?

Q. Page 32. The passages I am
particularly interested in are on page 33.

In the middle of the second paragraph
on page 33 there is reference to the shunt that had
been surgically installed:

"A Blalock-Taussig procedure done a
few weeks before death was patent with
a narrow anastomotic diameter of 2 mm."

Can you tell me first whether you
regard that as an adequate shunt?

A. No, it is small.

Q. Very small. I'm sorry, you
said "small"; I said "very". Is it adequate for the
purpose?

A. No, it would not produce
adequate oxygenation of the blood.

Q. I take it that having read the



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chart you were aware that the shunt which had been
inserted was of a rather inadequate diameter?

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A. Yes, but the best index is
really the blood gases and we should probably look for
them.

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Q. Could we just go on for a
moment here? Certainly the pathologist echos the
views that you have expressed in the final paragraph
there:

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"Death in this case was somewhat
sudden and unexpected being mani-
fested by sudden onset of bradycardia
and cardiac arrest. In view of the
subsequent cases on this ward of
digoxin overdose, this must now be
raised as a possibility but there is
no confirmation of this since at the
time of the gross autopsy it was not
considered."

19

And then the next sentence but one:

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"In this patient there are several
other even more likely precipitating
causes of death, namely, an arrhythmia..."

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Is that arrhythmia or arrhythmia? It is supposed to
be arrhythmia?

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A. It is supposed to be
arrhythmia.

Q. That is what I thought.
"...and/or sepsis, and/or an enteric
infection."

Dr. Hastreiter, from your view of
this chart do you agree or disagree with the statement
that those are other more likely precipitating causes
of death in this child than digoxin toxicity?

A. I find it very difficult to
compare because they are precipitating causes, possible
precipitating causes. However, for instance, an
arrhythmia does not usually occur suddenly. There is
usually a reason for it. It is usually preceded by
smaller episodes or less severe episodes before they
become so severe that they will kill a baby.

Q. Of course -- in that context,
forgive me, a couple of sentences after I stopped
reading, the pathologist notes:

"Some problems with dysrhythmia were
noted in the period immediately prior
to death."

So there may have been some antecedent episodes of
dysrhythmia?

A. Yes, but there were no



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indications that anybody was very seriously worried about his arrhythmias, that they could be lethal or so.

Q. Yes.

A. With regard to sepsis or infection I would say that again you usually have some pre-monitoring signs. You have, you know, slow deterioration or you may have -- occasionally it may appear all of a sudden, but it is unusual. But I don't see any other indication or confirmation of the diagnosis of sepsis which is usually possible by cultures or other bacteriologic studies.

Q. Well, certainly there had been the incident of the bloody stools, had there not?

Does that suggest infection of some kind?

A. The bloody stools were attributed to -- this was earlier. It was I think a week and a half earlier or maybe a week.

Q. About a week prior to death, yes.

A. I believe, and was attributed to necrotizing enterocolitis, which is a disease of the bowel of which the etiology is not known.

It is not necessarily an infection and the baby apparently had recovered because if there were no major complications such as rupture of the



F12

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2 bowel which sometimes can occur, or severe bleeding -
3 it was a mild bleeding only - but there appeared to be
4 an improvement or even total recovery from that.

5 Q. The final four lines of the
6 last paragraph of the report on page 33, Dr. Hastreiter,
7 refer to bacteriological cultures:

8 "...several bacteriological cultures
9 obtained from specimens of several
10 different sites grew E. Coli. The
11 interval from death to autopsy was
12 5 hours and the positive cultures
13 obtained are thus considered signi-
14 ficant. E. Coli septicemia may have
15 contributed in a significant manner
16 to this infant's death."

17 Is that a view that you share?

18 A. Let me just look at this for a
19 second. Excuse me.

20 These cultures were obtained from the
21 blood I assume. I am not sure. They don't state
22 here, or was it --

23 MR. OLAM: Mr. Lamek, for the
24 doctor's reference, page 32, Item No. 2 under
25 'anatomical diagnoses' reveals where the sites were.

MR. LAMEK: Yes. Thank you.



F13 2

THE WITNESS: Oh, from pericardium,
spinal cord and large intestine serosa.

I think they are suggestive findings.
They certainly suggest the possibility that sepsis --
sepsis can be a very difficult diagnosis. Sometimes
there may be sepsis and cultures may be totally
negative, so one can never exclude this diagnosis.

I don't believe that from a clinical
standpoint sepsis was being very seriously considered.

We have somewhere earlier on page --
or was it later, on Dr. Freedom's report...

MR. LAMEK: In answer to one of the
questions you raised earlier, doctor, pages 45 and 46,
there is a note by a cardiology Fellow on the 22nd of
the month, the 22nd of November, the date of admission,
showing on the second page there under 'arterial
blood gases', "severe hypoxia, PO2 less than 30".

A. Yes.

Q. And the surgery was on the 24th
and therefore what we are looking for is blood gases
after the 24th, is it not?

A. Yes.



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Q. There is a base line anyway.

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A. Yes, they have the laboratory sheets in the back, Page 122. You see, shortly after surgery the blood gases were 55, 47. There was a day of surgery, I think the 24th, yes.

Q. Yes.

A. Then we have the 25th, a pO₂ of 41. You see, this 40 is pretty good, 40 to 50 is quite good for this type of situation; 41 is still good.

Q. The 30th of November on Page 125 we have 38, a pO₂.

A. That is still reasonably good.

Q. December 9th we seem to have 15.

A. That's 15, that is very low, that was probably at the time of the arrest, wasn't it; 3:55 is the time.

Q. The baby got from the cath. lab at 4:00.

A. No.

Q. No, no, I'm sorry.

A. This baby had an arrest at 3:29.

Q. 3:29, that's right.



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A. So, this was after the arrest.

3

Q. Okay.

4

A. Yes, that is very slow.

5

Q. Well, okay, Doctor, obviously

6

I am interested particularly in this child because

7

it was your view, not a view apparently shared by

8

the other physicians at the meeting on September 13th

9

that this was a case of probable murder and with

10

that there is that view expressed and apparently not

11

shared by the other physicians I thought it worth

while to take a rather closer look at it.

12

A. Can we take a look for a

13

minute at Dr. Freedom's note here on Page 37 which

14

perhaps summarizes the situation, at the very bottom

15

it says, "Course in hospital" and then he mentioned

16

the pO2 of 62, was 47 after the insertion of the

shunt.

17

Q. Yes.

18

A. I don't quite understand that.

19

What the 62 means here, I'm not sure.

20

Q. Yes.

21

A. "The baby had a relatively

uneventful post-operative course..."

22

Relatively uneventful.

23

"...except for the continuation of

24

25



1
2 irregular ectopic beats throughout his
3 post-operative course.

4 The baby was noted to have a
5 bloody stool on the 6th of December,
6 and the possibility of necrotizing
7 enterocolitis was raised."

8 Now, necrotizing enterocolitis does not usually result
9 in sudden death like this either.

10 "Later astrovirus was isolated in the
11 stool, and the diagnosis of necrotizing
12 enterocolitis was not completely
13 accepted."

14 So they probably felt that this was
15 a gastroenteritis of some kind, an infection of the
16 bowel.

17 "However, he was treated on the
18 NEC.

19 In the early morning of
20 December 9th, 1980, the baby suddenly
21 dropped his heart rate, which had been
22 between 120-170/min., to between
23 40-50/min. Within a few minutes he
24 had periods of asystole. Cardiac
25 arrest team was called..."

Now, he doesn't say whether this was unexpected or not,



1
2 but he certainly doesn't say that it was expected
3 there. It looks like he more or less confirms my
4 opinion that the post-operative course was relatively
5 uneventful, except that the baby was definitely blue.
6 The shunt was too small, no question about it, he
7 would need another operation, but again there is no
8 reason for a baby like this to suddenly die, usually.

9 Q. And that is the basis for your
10 view that this raised a sufficiently high index of
11 suspicion in your mind for you to categorize it as
12 probable murder.

13 A. Right.

14 Q. Now, there are two more
15 children in this group and perhaps we can deal with
16 one of them before the break very quickly and that
17 is Real Gosselin. You will find your report on him
18 at Page 134 of the binder.

19 This child you had scored for severity
20 as 8. You appear, Dr. Hastreiter, to have considered
21 the death to be unexpected with an abrupt onset of
22 terminal symptoms.

23 A. Yes.

24 Q. At the foot of Page 134,
25 Dr. Hastreiter, you have commented on the Cause of
Death:



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"The cardiologists at HSC have no good explanation for the infant's sudden deterioration and death (see Dr. Freedom's letter). They doubt that the demise can be explained purely on the basis of prostaglandin therapy. Digoxin overdose is a possibility."

And then in your sort of the box score at the bottom on probability you have described that as a good probability of massive digoxin overdose. On the face of it, I confess there seems to me to be a difference between saying digoxin overdose is a possibility and then rating it as a good probability. What occurred between the last two lines?

THE COMMISSIONER: I don't think you are stating what the doctor said his rating means. I understand that good means...

MR. LAMEK: I am essentially inviting him to say it again.

THE COMMISSIONER: All right.

THE WITNESS: Yes, the rating of good means that we certainly have to pursue this and that is basically it.

Q. There is enough of a suspicion to warrant further inquiry.



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A. Right.

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MR. SCOTT: It might ease the way when we come to cross-examination, if I have it right, and I hate to suggest a question to my friend, but does good mean ---

MR. LAMEK: After yesterday you should.

MR. SCOTT: But does good mean possible, is that what we have to draw from that?

THE COMMISSIONER: Well, that is not what he said. It means that good must be followed up. It probably does mean possible.

MR. SCOTT: Less than possible, to be followed up.

THE COMMISSIONER: No, no.

MR. LAMEK: Sufficient cause for concern to warrant following up and further investigation.

MR. SCOTT: And fair means?

MR. LAMEK: You can't rule out entirely the possibility.

THE COMMISSIONER: Small means nil, or very close to nil.

MR. LAMEK: Very close to nil, that's right.

THE WITNESS: Yes, small are the ones that



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we ruled out essentially, totally.

3

MR. LAMEK: Q. Now, we have got no

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toxicological ---

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A. Small probability.

6

Q. I'm sorry?

7

A. Small probability.

8

Q. And virtually no possibility.

9

A. It sounds a little strange,

10

perhaps the word small, but that is what it means.

11

Q. All right, as long as we under-

12

stand what the labels mean we can deal with them.

13

A. Yes.

14

Q. Now, as far as Gosselin is

15

concerned we have no toxicological information, Dr.

16

Hastreiter. When we got to the meeting of September

17

13th the case is reported in the minutes at Page

18

9 and there is unanimity among the physicians present

19

at the meeting that this is a death that should be

20

characterized as suspicious. Mr. Cimbura, lacking

21

any toxicological information, conservatively cast

22

his vote for natural.

23

A. Yes.

24

Q. Other than the abruptness of

25

the onset of the terminal episode and the unexpected-

ness of his timing, as you assessed it, was there anything



1
2 else in this child's case that prompted your
3 characterization of his death as suspicious?

4 A. Maybe I should briefly review
5 it. This is a baby that was about three weeks old
6 again and had a severe coarctation of the aorta,
7 rather extensive, and aortic stenosis, a small left
8 ventricle. This is a bad combination. It is a
9 serious lesion. I'm sorry, what was my rating again
10 for the severity of this one?

11 THE COMMISSIONER: 8.

12 MR. LAMEK: 8, yes.

13 A. Yes. The baby was quite sick
14 at the time of admission, was treated with digoxin
15 diuretics, prostaglandin, and had a cardiac
16 catheterization I think the day after his admission.
17 There is an error in the dates here probably in my
18 sheet. He also had an episode of apnea, or had two --
19 let's see, why he was receiving prostaglandin in the
20 evening of 17/12, which I believe was the date of
21 admission.

22 THE COMMISSIONER: Yes.

23 THE WITNESS: A. The baby developed
24 two brief episodes of apnea around 19 hours and he was
25 felt to have more severe heart failure, was given
lasix.



At 2:25 had a prolonged episode of bradycardia and an arrest was called and resuscitation was uneventful. So, this death occurred shortly after his admission. Why he was receiving prostaglandin? I'm sorry, the cardiac catheterization had been performed elsewhere, had been performed in Winnipeg at another hospital and was not done here. Now, one could argue that the administration of prostaglandin could be responsible for his apnea as well as his bradycardia and possibly the cardiac arrest. I think it is an acceptable reason.

Maybe we could look at the Gosselin chart because there is a letter by the cardiologist at the hospital that may explain things a little better.

MR. OLAH: Page 35, Doctor.

THE WITNESS: Yes.

So, on Page 36, I think at the very last paragraph there is a summary of the letter of the baby's course by Dr. Freedom and it says:

"In summary, then, this infant had a severe thoracic coarctation of the aorta, and I am really disturbed by this baby's demise just a few hours prior to surgery. I doubt that the demise



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2 can be explained purely on the basis
3 of apnea secondary to the prostaglandin
4 therapy, and at this time I really don't
5 have a good explanation for this baby's
6 sudden deterioration and death. If
7 microscopic examination adds anything
8 more I will, of course, forward these
9 results on to you as well."

10 Et cetera.

11 So, that is basically the situation
12 here where the cardiologists at the hospital themselves
13 had some doubts about the reason for the baby's death.
14 It was on purely clinical grounds.

15 THE COMMISSIONER: I guess we will have
16 to put Dr. Freedom's evidence on that to him. Is that
17 going to be available?

18 MR. LAMEK: I was about to do that and
19 refer to it. Perhaps this might be a sensible time
20 to take a break.

21 THE COMMISSIONER: We might just take
22 a break now for 20 minutes.

23 ---Short recess.
24
25



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2 ---Upon resuming.

3 THE COMMISSIONER: Yes, Mr. Lamek.

4 MR. LAMEK: Thank you, sir.

5 Q. Doctor, we were talking about
6 the Gosselin case, and you I take it on your review
7 of this chart found some corroboration for your view
8 that the death was sudden and unexpected, from Dr.
9 Freedom's letter to which you referred just before
10 the break.

10 A. Right.

11 Q. I am obliged to tell you that
12 Dr. Freedom when he gave evidence here, told us that
13 it was not really his view that the death of this
14 child was unexpected, and he was not in fact as
15 disturbed as he had said in the letter. He told us
16 that in fact in writing the letter to the referring
17 physician he had relied upon a report of a resident
18 who had told him two things really about the child;
19 first, that the child had been stable in the period
20 prior to his death; second, that the child was
21 responding well to the prostaglandin therapy. Dr.
22 Freedom said, and he seemed to be understandably a
23 little embarrassed to say so, that he had not reviewed
24 the chart himself before writing this reporting
25 letter, that when he did indeed review the chart he



1
2 found that he disagreed with both of the reports that
3 his resident had provided to him and was really rather
4 satisfied that the child's death was not unexpected
5 as he did not appear to be responding well to
6 prostaglandin therapy.

7 Now, that evidence was put to Dr.
8 Fay when he was here, and Dr. Fay in light of that,
9 I should tell you, changed his opinion of the Gosselin
10 death. He had expressed the opinion at the meeting
11 of September 13th, 1982 that it was a suspicious
12 death. He was now prepared to say that he regarded
13 it as a natural death.

14 Forgive me, I don't mean to sandbag
15 you with that evidence, but was there anything other
16 than Dr. Freedom's own letter in this chart which
17 led you independently to the view that the death was
18 not explainable on clinical grounds?

19 A. Excuse me just a second and
20 I will go through the chart here.

21 Q. Yes, of course.

22 A. It is rather difficult to
23 make a decision in a situation like this, because
24 this child was a very sick child, there is no question
25 about it. I think Dr. Freedom's letter was certainly
an important contributory factor in our decision,



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2 in my decision to grade this child as a good
3 probability of digoxin intoxication.

4 I still have a little difficulty
5 though understanding why he would write a letter like
6 this if there wasn't at least, you know, some
7 evidence that the child had improved, and why the
8 child was not operated on, because this is a lesion
9 that will require surgery. The prostaglandin infusion
10 is just a temporary treatment. I can see that when
11 the baby was admitted, and I believe that the date
12 of admission was the 17th of December, that the baby
13 was quite sick and the baby was treated extensively
14 with digitalis diuretics and prostaglandin. But
15 the baby died on the 18th, that is actually just one
16 day, 24 hours or so after his admission to the
17 hospital, and then there probably was no time for
18 the baby to be scheduled for surgery, or not enough
19 improvement clinically that would permit the baby
20 to be operated on.

21 I am trying to see if I can find --
22 I read the pathologist's note here, and that doesn't
23 help too much as far as evaluating the status of
24 the child prior to the demise.

25 Q. Perhaps I can refer you,
Doctor, to the discharge report on Page 21 of the



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chart.

A. Yes. Okay.

Q. Certainly in the final paragraph of Page 21 and in the paragraph on Page 22, the writer of that report seems to suggest, as I read those paragraphs, that the baby was not doing badly.

A. Right.

Q. It says the Prostaglandin was started; the child did well during the day; two brief episodes of apnea around 1900 hours. The liver was again down 5 cm. Excellent response to lasix. Arterial blood gases and electrolytes was within normal limits. The baby then did well until 2:25 on the 18th.

A. I believe that the same information was available at that time. Of course, we had to base our decisions on these reports, on this type of information. I have no reason to really change my grading of this baby because Dr. Freedom changed his mind, at this time, at this point in time.

Q. I suppose on the one hand, Dr. Hastreiter, one would normally show some deference to the opinion of the attending physician.

A. Sure.



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Q. Although in this case I take it Dr. Freedom does not appear to have been so close to this child that he was not misled by his resident's report, and therefore, you are left to your own judgment of the chart as a whole, and is it on that basis you say you do not really change the opinion that you originally formed?

A. Yes. I think Dr. Freedom is an excellent cardiologist and I have great regard for him and respect. I believe that he was probably partially misinformed at the time. It could be, I don't know who Dr. Stephen is who wrote this discharge summary, it may have been the same person ---

Q. It may be the same person who advised him.

A. Yes, or misinformed him. I think there is enough evidence here in this chart to indicate that the baby was doing reasonably well and that the arrest occurred rather unexpectedly.

I should re-emphasize, however, that this is a very severe type of problem. It is very likely that the baby might not have survived surgery, or might have died even before surgery.

Q. Yes.

A. And also the possibility that



1
2 prostaglandin may have influenced the baby's terminal
3 course, because prostaglandin can cause all these
4 complications that the baby had.

5 Q. May we then turn to the last
6 of the children whom you described as showing a good
7 probability of digoxin overdose, and that is Laura
8 Woodcock.

9 Laura Woodcock did not appear to have
10 a very serious cardiac problem. You rated her on the
11 severity scale 2, and your report is found at Page
12 171 of the binder. Now, I think Laura Woodcock's
13 cardiac condition was not a terribly serious one,
14 and that is the view that is shared by the hospital's
15 cardiologists. She did have a liver disease problem,
16 did she not?

17 A. Yes.

18 Q. And indeed you noted that
19 on the scoring, the severity scoring sheet that
20 you prepared.

21 A. Yes.

22 Q. In your judgment and based
23 upon what you find in the chart, was the liver problem
24 that this child had a life threatening problem?

25 A. May I look to the chart for
just a moment, please?

Q. Yes, of course.



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If it is of any assistance to you,
Doctor, the report of the liver biopsy is on Page 71.

THE COMMISSIONER: Is there something
you are looking for particularly, Doctor, because we
might be able to ---

THE WITNESS: Yes, I'm just trying to
look for the laboratory findings to see if we have
enough information to tell us the severity of the
liver disease.

MR. LAMEK: Q. The chemistry reports
are Page 66 and 67, Doctor.

A. Yes. The bacteriology earlier
than that -- I don't know whether you are interested
in that?

It is more difficult for me
to make decisions regarding diseases which are not
related to the heart. I think the heart problem
here was clearly not a very significant one.

Q. Yes.

A. So we are left with the
hepatic problem, the liver disease, and I think liver
disease can be very tricky sometimes, and the course
variable.

From reading the chart and looking
at the information we have, the child obviously has



1
2 serious liver disease. No question about it. But I
3 don't see any indications that death was immanent
4 or expected, nor do I see any changes in the liver
5 function studies that will indicate worsening of the
6 condition or anything in that direction.

7 When I reviewed this in 1982 this
8 was also my impression then that it would be difficult
9 to attribute death at that particular time and so
10 abruptly, attribute it to liver disease.

11 I believe -- this is my opinion.
12 Perhaps if you have a hepatologist to testify he would
13 disagree with me and he would feel that...

14 Q. We had one but he talked about
15 something else.

16 Well, the real question in the case
17 is contained in the last sentence of the final autopsy
18 report, is it not, Doctor, at Page 33, where the
19 pathologist says:

20 "The exact cause of the sudden cardio-
21 respiratory arrest is uncertain."

22 I suppose the question is whether the liver disease
23 could have caused that arrest to occur.

24 As a matter of professional opinion
25 and probability, can you tell me what your view of
that question is?



1
2 A. Yes. My view of that is that
3 it would be extremely unlikely because the course of
4 liver disease, there are so-called fulminating
5 insults to the liver. For instance, an acute infection
6 or poisoning. But the child had already been in the
7 hospital four days, and I don't see any clear evidence
8 that the child was really deteriorating or getting
9 worse as far as the liver condition is concerned, and
10 therefore I find it difficult.

11 The usual course for liver disease
12 is a slower, more gradual course, where the situation
13 deteriorates slowly and eventually they may die, but
14 that is not apparent here either.

15 Q. There was toxicological informa-
16 tion available about this child. It is in the report
17 dated September 29, Exhibit 95-E on Page 5. It is
18 not going to carry us very far, I think.

19 Mr. Cimbura reports:

20 "The following specimen was in a plastic
21 bag bearing seal No...(so and so)...
22 and is reported to be from autopsy
23 after exhumation of Laura Woodcock."

24 It consists of a sample of tissue in jar marked
25 "muscle", and the only thing that he is able to
report is that,



"Trace of digoxin like substance
(4 nanograms per gram calculated
as digoxin) was indicated."

I take it that is of no assistance in helping you
decide the probable cause of this child's
death.

A. Will you excuse me just a
second? I have in my notes here that no digoxin was
prescribed for ---

Q. For Woodcock?

A. For Woodcock. This may be in-
correct.

THE COMMISSIONER: Yes, I think so.

MR. LAMEK: Q. I think that to be in-
correct. Perhaps at the referring hospital, yes.

THE COMMISSIONER: She had no digoxin
at this hospital but there apparently was ---

THE WITNESS: Digoxin earlier?

THE COMMISSIONER: Well, I don't know.

THE WITNESS: Because this lesion does
not really warrant the use of digoxin. It is a small
ventricular septal defect, and I don't see any reason
why she should have received digoxin. However, -- oh,
here we have the chart. We should be able to...

MR. LAMEK: Q. She seems to have been



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on digoxin at the Oshawa General Hospital.

3

A. Yes.

4

Q. From which she was referred to

5

the Hospital for Sick Children.

6

A. Okay.

7

THE COMMISSIONER: Is that contained
in the chart?

8

MR. LAMEK: I am just looking for it

9

now, sir. It should be on the orders somewhere from

10

Oshawa.

11

MR. SCOTT: Page 59. I am trying to

12

catch up with Mr. Olah here.

13

MR. LAMEK: Well, that is the medica-

14

tion sheet from the Hospital for Sick Children. No-
thing there.

15

THE WITNESS: There is no digoxin

16

there.

17

MR. OLAH: (Inaudible.)

18

MR. LAMEK: Yes, my recollection is

19

that the referring hospital, if we can find it ---

20

MR. OLAH: If you look at the extract

21

relating to Laura Woodcock, it indicates that CHF
was diagnosed, that she received digoxin.

22

MR. LAMEK: Well, if we look at Page 14.

23

24

25



1
2 THE COMMISSIONER: That is something
3 we did ourselves. It is not necessarily right. Page
4 14?

5 MR. LAMEK: I have a very bad copy
6 here and we may have to check the original. I think I
7 see the word digoxin against the hour 2145.

8 THE COMMISSIONER: Yes, that is right.

9 THE WITNESS: Yes, on Page 28 ---

10 Q. Apparently administered intra-
muscularly.

11 A. Yes. On Page 28 the autopsy
12 report also says that she had received -- the second
13 paragraph towards the bottom.

14 Q. Yes. Therapy with digoxin was
15 begun but discontinued because the heart rate fell.

16 A. Yes. So then the toxicological
findings are not meaningful.

17 Q. That is unhappily all we have
18 in that context on this child, Dr. Hastreiter.

19 A. Yes.

20 Q. You classified this child
21 initially as probable murder and that is the meeting
22 of September 13, if I can find the page, Page 14.

23 I confess I am adding a little
24 translation there. At the end of the summary of your
25



1
2 introductory statement on Laura Woodcock it is
3 reported that,

4 "Therefore he classified this as
5 probable."

6 I must say I was reading that to read probable murder.
7 Is that what you meant?

8 A. I am not really sure from
9 reading this because there are many errors in the ---

10 Q. Yes.

11 A. --in the transcript of the
12 minutes of that meeting.

13 Q. In any event, when it came to
14 the canvassing of the opinion, again you appear to
15 have a higher index of suspicion than any of the other
16 physicians there. You categorized it as a suspicious
17 death and they as a death involving very little
18 suspicion

19 A. Yes. I have said that heart
20 disease was of a very mild nature.

21 Q. Yes.

22 A. Also had liver disease. I
23 didn't elaborate on that.
24
25



Hastreiter, dr.ex.
(Lamek)

/BM/ak

1
2
3 I said later that no one felt that
4 other problems were severe enough to cause death at
5 that particular point in time, that was my feeling
6 then. Therefore, I apparently classified her as
7 probable. I don't remember that, but Dr. Fay also
8 commented on the liver disease and he felt it was
9 resolving. She also had some evidence of pneumonia,
10 but this was not felt to be a very serious problem.
11 Pneumonia, possible aspiration, but it was not
12 thought to be a cause of her death even.

11 Q. Yes.

12 A. And then the others, there
13 was no toxicology. I see that I classified her as
14 a suspicious death.

15 Q. Yes.

16 A. Eventually. The others
17 actually had a lower index of suspicion with a
18 very little suspicion and that is how it ended.

19 Q. Do I take it that your
20 characterization of the death as suspicious in the
21 absence of any toxicological data essentially reflects
22 your view based upon the chart that you do not see
23 a clear clinical course for the death and the death
24 was somewhat unexpected in its timing. Is that what
25 it comes to?



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A. Exactly.

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Q. Now, Doctor, those were the children whom you rated as good probability of massive digoxin overdose on the basis of your chart review.

7

8

9

MR. BROWN: If I might interject. I believe you add one other to the list, Baby MacDonald.

10

11

MR. LAMEK: I'm sorry, did we not do MacDonald?

12

13

MR. BROWN: No, we did not.

THE COMMISSIONER: Yes, you haven't done MacDonald, you are quite right.

14

15

MR. OLAH: Maybe I can resolve the problem of digoxin, page 38 of the chart.

16

17

18

THE COMMISSIONER: Page 38. Yes, I think we got that. I think there was a private conversation that we had up here that doesn't get transmitted.

19

20

MR. OLAH: Thank you.

THE COMMISSIONER: Yes.

21

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MR. LAMEK: Q. Well, let's look very quickly then at MacDonald. Your report on MacDonald is found at page number 132. You had given this child, or you gave this child a severity



Hastreiter, dr.ex.
(Lamek)

J3 1
2 scoring of 5.

3 MR. SCOTT: 132?

4 MR. LAMEK: 132.

5 Q. You were lacking any toxico-
6 logical information but at the preliminary hearing,
7 page 11 of Volume 34 of the transcript there,
8 Mr. Commissioner, you included this child,
9 Dr. Hastreiter, among those whose deaths you said
10 were consistent with digoxin toxicity and which
11 carried a possibility of what you called massive
digoxin overdose.

12 A. Right.

13 Q. And again at the meeting on
14 September 13th at page 8 of those minutes, again,
15 in your initial summary of the child's case and
16 history, you placed the child, the death in the
17 probable category. Again, we are not quite sure
18 what that means, whether you meant probable murder
19 or high probability or good probability. Your vote,
20 when it came to it, was for suspicious death, a view
21 in which the other physicians concurred and you based
22 your suspicion upon the fact the baby you said died
23 a little bit unexpectedly but the facts are not as
strong as in other cases categorized as probable.

24 Other than the element of unexpectedness
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in the death of this child, was there anything else in the chart which created the level of suspicion that you had?

A. Perhaps I should review for a minute the main findings.

Q. Yes, of course.

A. This was a seven month - no, five months old baby with Down's Syndrome.

Q. I believe so.

A. Who had a large ventricular septal defect. At autopsy later it was found to be 14 millimetres in diameter, which is quite large. The baby had signs of congestive heart failure on admission to the Hospital, which occurred on the 12th of December of 1980.

It is interesting that the early months of life were uneventful. At five months, which was her age, then she was admitted to the local hospital with progressive dyspnea, fever, cough. So, she probably had an infection which precipitated the development of heart failure. This is not unusual. She was then treated at the other hospital first with digoxin, Lasix and antibiotics, namely, ampicillin.

Upon admission here, let's say, the



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2
3 chest x-rays showed that the heart was large and there
4 was no evidence of pneumonia, which is often a
5 complicating factor in an acute situation like this.
6 They continued her cardiac drugs, she remained
7 tachypneic, took feedings well but vomited frequently,
8 was kept in oxygen.

9 Now, this is a pretty classical
10 picture of congestive heart failure, a child with
11 a large ventricular septal defect and nothing so far
12 surprises me. However, then comes this acute episode
13 again where she, on the morning of the 13/12 she
14 became tachycardic, tachypneic, had a cardiac
15 arrest and died. I don't know the exact time of the
16 arrest, but she died at 4:30 in the morning.

17 Q. It was about 3:40, 3:45 in
18 the morning, Doctor?

19 A. Yes.

20 Q. I think I should also mention
21 that the cardiologists at the Hospital were somewhat
22 surprised at this child's death and there are some
23 written comments evidently in the chart to which
24 I refer here.

25 The immediate cause of death was not
clear "See comments in medical record by cardiologist".
It may have been a vagal reflex, in other words,



J6

1
2 sometimes when you pass a tube down the throat, the
3 larynx or the thorax, you may produce a vagal reflex
4 where the heart slows down, it may even occasionally
5 stop completely and children have been known to die
6 as a consequence of such a maneouvre; or an arrhythmia.
7 Well, arrhythmias don't just occur, there are usually
8 reasons for them to occur.

9 So, there were some uncertainties
10 here, some unexpectedness and this terminal event
11 was rather abrupt again.

12 Now, I would like to perhaps see if
13 I can find the note of the cardiologist here who
14 felt that it was unexpected also.

15 MR. OLAH: Page 46, Doctor.

16 THE WITNESS: 46?

17 MR. LAMEK: Q. That is the discharge
18 report.

19 A. Thank you.

20 Q. That is the discharge report
21 and I don't know whether that would have been written
22 by the cardiologists, it was a cardiologist note you
23 were looking for?

24 A. No, but this report also, at
25 the bottom of the last paragraph contains some
information. It says:



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"The immediate cause of death could not be ascertained at the time of dictation. It could have been due to a vagal reflex elicited by the suction manœuvre but arrhythmias or poor sinus function related to the heart defect are also to be considered."

And then it goes on to say that digoxin toxicity was not suggested by the admission ECG, and other possibilities. But there was nothing very clear.

Q. I think you may find the origin for those suggestions, Doctor, on page 58 of the chart where the resident, who was called at 3:35 in the morning stated his impression or differential diagnosis as being vagal reflex, arrhythmias, a digoxin toxicity or poor conduction system.

A. Yes, I see that.

Q. Those appear to be the observations or impressions or diagnoses made by the resident who attended the child when she got into trouble.

A. Right. And further down he has additional possibilities such as dehydration,



1
2 acid base imbalance, electrolytes.

3 Q. Yes, which he canvasses and
4 rejects as unlikely.

5 A. Yes, right. But there appear
6 to be some doubt as to what really had caused his
7 terminal event. There wasn't a clear reason for it.

8 Q. Can we just look at those
9 differential diagnoses on page 58 for the moment.
10 Doctor, I recall asking Dr. Rowe this, but I would
11 like your views upon it, the resident was suggesting
12 four possibilities: vagal reflex, arrhythmias,
13 digoxin toxicity or a problem in the conduction system.
14 Is it possible to view those differential diagnoses
15 as in fact all perhaps being different aspects of
16 the same one diagnosis, that is to say, does not
17 digoxin act in part through the mediation of the
18 vagal nerve?

19 A. Certainly, yes.

20 Q. And therefore some involvement
21 of the vagal nerve may reflect some digoxin effect
22 upon that nerve.

23 A. Yes.

24 Q. Arrhythmias we know can be
25 caused by digoxin toxicity?

A. Yes.



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Q. And digoxin we know acts upon
the conduction system?

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A. Yes.

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Q. And therefore it may be that
in canvassing the possibilities what the resident
was doing was canvassing four different versions of
the same one differential diagnosis, that is to say,
digoxin toxicity, not deliberately or intentionally,
but he has really focused on four aspects of one
thing, has he not?

11

12

A. That's true, except that
there was no hard evidence for it.

13

Q. Yes, of course.

14

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A. And the possibility that this
may have been caused by other etiologies in my
opinion is a little bit remote. A vagal reflex
for instance is usually pretty obvious, the nurse
inserts the tube or the doctor and then suddenly the
child collapses or the heart slows down markedly or
arrests. Arrhythmia doesn't occur all of a sudden
and without these pre-monitoring signs of previous
arrhythmias.

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Sick sinus node, there is no evidence
for that really, that is, first of all, it is not
that common and, secondly, you would also expect to



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3 have previous indications of that. So, I don't
4 really see a very good reason. The child had severe
5 congestive heart failure. That was the one diagnosis
6 that we know for certain. That can be a very serious
7 problem. It can predispose to many other problems
8 that are listed here, certainly the arrhythmias,
9 but again, there is no clear indication that this
10 occurred.

11 Q. All right. Well, Dr. Hastreiter,
12 are you still of the view that for the reasons that
13 you discerned in the chart, this is a death too that
14 where the involvement of digoxin toxicity has to be
15 suspected?

16 A. Yes.

17 Q. Okay. Now, I think we have
18 completed the list of those children who you reported
19 as showing a good probability of digoxin overdose.

20 In light of what you have told us is
21 meant by the category fair probability, that is to
22 say, these are the cases where there is no strong
23 suggestion but you can't entirely eliminate the
24 possibility of digoxin involvement. In that category
25 we have a number of children. They are Amber Dawson,
Lillian Hoos, Philip Turner, Paul Murphy, Antonio
Velasquez, Laurette Heyworth, Richard McKeil, Antonio



1
2 Adamo, Colleen Warner and Michelle Manojlovich.

3 I don't propose to go through those cases separately.

4 Are you able to tell us, Doctor, whether there was

5 some thread running through those cases which led

6 you to have a low suspicion but one which could

7 not be completely dispelled and, so, they were classi-

8 fied as fair. Is there something common to those

9 cases that triggered this low index of suspicion?

10 A. Yes. As the category indicates
11 these were the children in whom we would like to
12 rule the possibility out but we couldn't completely
13 rule it out because of one or another factor there
14 that still remained unclear.
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There was some controversy about some of these cases. I remember very well that in Murphy, for instance, everybody else disagreed with me and I eventually changed my opinion I think.

Q. Everybody else regarded Murphy as a natural death?

A. Everybody I think regarded Murphy as a natural death. When I reviewed his chart I also felt the probability of natural death was very high, but I wasn't quite sure about the event immediately preceding his death, therefore I classified him as a fair case.

THE COMMISSIONER: This is -- are we talking about Paul Murphy?

MR. LAMEK: Paul Murphy, yes.

THE COMMISSIONER: I'm sorry, I am reading from page 20.

MR. LAMEK: Of the Minutes.

THE COMMISSIONER: Of the Minutes, and there you did classify him as a natural death, did you not, Dr. Hastreiter?

THE WITNESS: Page 20?

THE COMMISSIONER: Yes.

THE WITNESS: Yes, that is right.

MR. LAMEK: Q. Both at the beginning and at the end of the extract.



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A. Right. But I had earlier
classified him as a fair.

Q. You placed him as fair on your
rating, that's right.

A. Yes.

THE COMMISSIONER: I think you
changed before you committed yourself on the Minutes,
is that so?

THE WITNESS: Possibly, yes.
Definitely. I think there was some discussion then
and by the time the Minutes were written I had already
changed my mind, and I felt that this was quite
reasonable because again Murphy was an older child,
was very sick and there was good reason for him to
die.

MR. LAMEK: Q. The other name in
that list of fair probabilities that is perhaps
surprising in light of the evidence that we have
heard here is that of Lorette Heyworth. Would you
tell us why you placed that child --

MR. SCOTT: What page is that?

MR. LAMEK: Hang on a minute and I
will try to find it. It is in two places.

MR. OLAH: One place is page 19.

MR. SCOTT: Mr. Olah says page 19.



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MR. LAMEK: Thank you. Mr. Olah is usually right about these things.

Q. You are reported at the meeting of the 13th to have classified her as a natural death. Although in doing your report upon her you had indicated low and fair probability.

A. Can you tell me what page that is, please.

Q. I am looking for it now, sir, page 115.

A. Thank you. Yes, this girl was another one that I had serious reservations about classifying her as a fair, really, but I was not quite certain about the terminal or the events immediately surrounding her death. She was an older child, eleven years old, with terrible central nervous system problems, who had a shunt operation performed, that is a central nervous system shunt for the circulation, to drain the hydrocephalus to prevent her from increasing the hydrocephalus and then she developed tricuspid insufficiency, which is a complication of this type of procedure; and she had very severe massive tricuspid regurgitation and she was really expected to die; she was really quite terminal. In addition she developed pulmonary emboli because of



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2 severe right heart failure. She had venous stasis,
3 clots in her veins, and eventually they broke loose
4 and went into the lungs. So that was a recurring
5 problem here.

6 Q. It may be, Dr. Hastreiter, and
7 I mean no disrespect, that the inclusion of people
8 like Paul Murphy and Lourette Heyworth in the fair
9 probability category demonstrates the low threshold
10 people had to reach in order to get into that
11 category, this was sort of an absolute -- how best
12 can I put this? This was the category into which you
13 would put people where there was the slightest
14 question at all in your mind; is that fair?

15 A. I think you have to remember,
16 or put yourself in the situation that we were in at
17 the time. Our function really was to exclude, not
18 to include, but to exclude the possible -- the cases,
19 and the question here was, could this child be ex-
20 cluded with confidence, you know, on the basis of the
21 information we had.

22 I think most of the cases that were
23 placed in the category of small, the last category,
24 we were absolutely certain were those who had either
25 an intraoperative death or something, either very, very
obvious.



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Q. Sure.

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A. But you are right. The

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special was --

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Q. If there was the slightest
question, you put them into the fair category?

6

A. Right.

7

8

Q. If there seemed to be a rather
more substantial question that needed to be pursued,
they went into the good category?

9

10

A. That is correct.

11

Q. Okay, doctor. Thank you.

12

Just one general question and then I
want to come to the case of Gary Murphy, please.

13

14

THE COMMISSIONER: Before you do that,
I would just like to ask one thing.

15

MR. LAMEK: Yes, of course, sir.

16

17

THE COMMISSIONER: That is the one
name that is in the fair, but I would have thought
under your standards would be under the good category
and that is Velasquez, who no one seems to be able to
account for his death except by describing it as an
idiosyncratic adverse reaction to Naloxone, which
apparently is the first in history to have that
idiosyncratic death. Have you any views on that?

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THE WITNESS: I wonder if we could

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K6 2 review him briefly?

3 THE COMMISSIONER: Yes.

4 THE WITNESS: Because I don't remember
5 the circumstances exactly.

6 THE COMMISSIONER: Yes, of course.

7 MR. LAMEK: Page 119 of your binder,
8 doctor. You classified him as suspicious at
9 the meeting, as did almost everyone else, but I just
10 wonder why he was put at fair and not at good in your
11 classification scheme?

12 THE WITNESS: We have no toxicological
13 information on Velasquez I don't believe.

14 THE COMMISSIONER: No.

15 THE WITNESS: I believe -- I know
16 they were trying to have the body exhumed and the
17 baby had been buried way down in Santa Lucia in the
18 West Indies where the family originally came from.

19 This child had a regular tetralogy of
20 Fallot, that is not a bad lesion, it is a fairly
21 common situation; had cardiac catheterization
22 surgery but he was a year old or so, yes, just about
23 a year old. The initial post operative recovery was
24 good, no major problems there. Then, two days
25 following the operation he received 8 mg. of Codeine
times 3. He had a persistent tachycardia which was



K7

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2 felt to be related to the pain from the chest incision
3 and because of the tachycardia at 2130 hours a dose
4 was given three hours earlier I believe, or was given
5 three hours following his previous dose of Codeine.
6 Then the heart rate decreased to less than 90. He was
7 given 0.2 mg. of Naloxone and shortly thereafter
8 he died, developed sort of a seizure, cardiac arrest
9 and died. Death was attributed to an idiosyncratic
10 reaction to Naloxone. The dose of Naloxone given
11 was high, but serious reactions to Naloxone are
12 virtually unknown except perhaps in very old people,
or in older people.

13 I agree, when I first looked at
14 this child's chart, I was fairly concerned about it.
15 There is a letter by Dr. Rowe in here where he also
16 summarized the situation, and I am sure he testified
17 to it earlier, and he states, this is in his final
paragraph, this is page 3 of this chart:

18 "The conclusion reached was that the
19 probability was the greatest that
20 this was an idiosyncratic drug
21 response in an infant whose post
22 operative course was complicated by
23 early heart failure and probably
infection."

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But none of these was a very serious problem.

THE COMMISSIONER: I don't want to induce you to change your view on it.

THE WITNESS: No.

THE COMMISSIONER: But I thought you could perhaps tell us why it was fair, because I would have thought under your standards where good simply means that you meet more consideration; is there anything about the death of the child that makes you think it is inconsistent with digoxin intoxication?

THE WITNESS: No, I really don't. In fact, I am surprised myself in looking back and I think the reason was because I remember that we were very concerned and in fact we tried to have the body exhumed. This was one of the children in whom I think efforts were made to have the body exhumed, and I think because of the fact the body had been taken to be buried in Santa Lucia it became a very serious problem, but I know we were very concerned about it. It may be that perhaps Dr. Rowe's opinion and the other cardiologists' opinion that the Codeine and Naloxone incident was perhaps a satisfactory explanation had something to do with our categorizing him,



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although I am not -- I think in reviewing the situation now with respect I would probably agree with you that he certainly is a good candidate.

MR. LAMEK: Q. Let us stay with that for a moment, doctor, because it is apparent we are not going to deal with Murphy before lunch and rather than start him let's deal with this for a couple of minutes if we may.

If this child Velasquez did indeed receive an overdose of digoxin as to which there is no clear evidence, obviously, would you think that the bradycardia which was attributed by the clinicians to the effects of Codeine could have in fact be the result of digoxin toxicity? It was the bradycardia you will recall that prompted the administration of the Narcan.

A. Right.



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A. Right. It certainly could have been.

Q. Now, if indeed the child were suffering the toxic effects of a digoxin overdose, is it likely in your view that he would have responded favorably to the first administration of naloxone as apparently he did?

A. Well, he was also receiving codeine.

Q. Yes.

A. And I think it may have been a combination. Naloxone has no effect on digoxin. It has only effect ---

Q. Yes, of course.

A. --on the narcotics.

Q. That is essentially what I am suggesting to you.

A. Right.

Q. If he were bradycardic because of digoxin overdose rather than as was believed codeine overdose ---

A. I see.

Q. -- I take it naloxone would not have caused any improvement in him.



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A. So you are saying that his
bradycardia improved also. The heart rate -- is
there any good evidence for that do we know?

5

Q. Well, the evidence of the
unhappy man who was involved in the thing. On Pages
4 to 5.

7

A. Yes.

8

Q. The resident who administered
this naloxone did write a memorandum concerning the
incident. On Page 5, Line 2:

11

"When I arrived at the bedside,
Antonio was somnolent and difficult
to arouse."

13

A. Page 5?

14

Q. Page 5 of the chart. I'm sorry.

15

THE COMMISSIONER: The numbers are at
the top right hand corner.

17

MR. LAMEK: Q. It is 000005.

18

A. I have a pathology report on
Page 5.

19

Q. Are we looking at the Velasquez
chart?

21

A. Yes. Oh, there is another
Page 5?

23

Q. The first Page 5.

24

25



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A. Yes, the first Page 5.

3

Q. Okay.

4

"When I arrived at the bedside..."

5

Says Dr. Wilkinson,

6

"...Antonio was somnolent and difficult

7

to arouse. Peripheral pulses were

8

easily felt (except in the right arm

9

due to the shunt). Blood pressure in

10

the left arm was 90/P; temperature

11

was 35.3; pupils were constricted;

12

abdomen was soft; liver edge was

13

sharp and no more than 2 cm below

14

the right costal margin. Because of

15

the papillary finding and the brady-

16

cardia and slowed respirations I felt

17

the child had had too much codeine and

18

asked for .4 mg naloxone to be drawn

19

up. A new IV had to be started and

20

this was done in a right temporal

21

scalp vein. The IV solution was con-

22

connected and .2 mg naloxone was given

23

IV (half cc. in to the tubing).

24

Within five minutes the heart rate

25

increased to 140/min., pupils dilated

to 2-3 mm and were responding more



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2 briskly to light. Antonio's activity
3 increased but he did not become fully
4 awake. The remainder of the naloxone
5 was given into the IV tubing with the
6 intention to run it in at a steady
7 rate but Antonio promptly had
8 extensor posturing and loss of
9 detectable cardiac electromechanical
activity."

10 There appears to have been a significant response to
11 the first dose of naloxone.

12 A. I think this question is rather
13 complicated.

14 Q. Yes.

15 A. Because as you know digoxin
16 has a very important vagal effect. The narcotics
17 also have an important vagal component, and I don't
18 think it is impossible that this vagal action has been
19 abolished now through naloxone because of a combina-
20 tion of codeine because this child was receiving
21 codeine, and if he had received digoxin additionally
22 that tachycardia may have occurred, but this is only
23 speculation. This is really a hypothesis.

24 Q. Have you any opinion or basis for
25 forming an opinion as to the likelihood of the



1
2 administration of .2 milligrams of naloxone reversing
3 the bradycardia as it did, if that bradycardia had
4 been the result of digoxin toxicity.

5 A. Of digoxin alone?

6 Q. Yes.

7 A. It would be very unlikely that
8 it would have reversed.

9 However, subsequent to that he
10 developed again bradycardia I would imagine because
11 he died.

12 Q. That is not quite what he
13 says. The report says from the person involved that
14 all of these good things happened, but if good
15 things had happened from .2 apparently the resident
16 thought that maybe better things would happen from
17 .4 and he administered a further .2 milligrams and,

18 "Antonio promptly had extensor postur-
19 ing and loss of detectable cardiac
20 electromechanical activity."

21 There doesn't seem to have been any slowing of the
22 rate; it just seems to have stopped.

23 A. That is right. This looks
24 more like a cerebral central nervous system type
25 situation and I would say -- I would be quite
confident -- he had bradycardia and finally arrested



1
2 at that time, but it would be impossible to separate
3 because he was having a seizure or was having some
4 kind of an opisthotonus related to this CNS
5 depression or stimulation actually.

6 I think this is probably another
7 reason that prompted us not to include him in the good
8 category, the fact that somebody was at his bedside when
9 it happened because it happened immediately following
10 the naloxone. There appeared to be a time relationship
11 and the symptoms were somewhat more suggestive of
12 a CNS involvement really, central nervous system,
13 but, you know, digoxin occasionally can do that also,
14 and it is difficult to sever.

15 We certainly -- the categorization is
16 always difficult, but there certainly is significant
17 suspicion or there was, you know, in this particular
18 case because I remember full well that we tried to
19 exhume the body.

20 THE COMMISSIONER: Yes. All right.

21 MR. LAMEK: Doctor, we have run
22 to exactly one o'clock and after lunch we can deal
23 with Gary Murphy if we may and then I will have
24 completed my examination.

25 THE COMMISSIONER: Very well. Until
2:30?



1
2 MR. SCOTT: Mr. Commissioner, we will
3 try by the end of the day or first thing in the morning
4 to get a note of the pages in Dr. Rowe's and Dr.
5 Freedom's and any other doctor's evidence ---

6 THE COMMISSIONER: We may be able to
7 supply them ourselves.

8 MR. SCOTT: There are I think 15 babies
9 that my friend has been dealing with. It may be that
10 your computers ---

11 MR. LAMEK: You mean other than that
12 last fair group?

13 MR. SCOTT: Well, I take it that my
14 friend is not going to proceed with this fair group
15 except ---

16 MR. LAMEK: Except to the extent that
17 I have, yes.

18 THE COMMISSIONER: Before we forget,
19 Mr. Hunt or Ms. Cecchetto, are you going first?

20 MR. HUNT: Well, I have never met
21 Dr. Hastreiter before.

22 THE COMMISSIONER: He is not exactly
23 your best client.

24 MR. HUNT: No.

25 MR. SCOTT: Well, there is no reason
to stop these introductions.



1
2 MR. HUNT: But under the rules as they
3 have been laid down sort of loosely, I wouldn't
4 object to going first.

5 THE COMMISSIONER: To going first,
6 right, as long as you can also go last?

7 MR. HUNT: Yes.

8 THE COMMISSIONER: Yes. All right.
9 Then I think you will be first on then. I don't
10 know, there will probably be the same suggestion that
11 you go on second and if you want to -- is that all
12 right by you?

13 MR. YOUNG: I have no objection to going
14 second but again, Mr. Commissioner, we would
15 appreciate the opportunity of going last or second
16 last.

17 THE COMMISSIONER: Well, I am not too
18 sure.

19 MR. YOUNG: Well, with respect ---

20 THE COMMISSIONER: Yes, I think if
21 you are forced on second you should be allowed to go
22 second last in the same way.

23 MR. SCOTT: Well, to be practical what
24 I am really suggesting is that it seems to me there
25 is going to be a considerable volume of material read.
If we finish everybody but Mr. Ortved and myself today---



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THE COMMISSIONER: Well, we wouldn't. There is not the remotest chance about that happening. There is no chance whatever, and I think it is unlikely...if everyone else can go on it is most unlikely that they will all be finished by tomorrow either.

MR. SCOTT: That is what I am looking for.

THE COMMISSIONER: So the probability is it will be Monday, but I don't want to deter you from getting anything ready tonight if you can.

MR. SCOTT: No, but it is no problem because my questions are going to be very simple which are to ask Dr. Hastreiter to comment on all that evidence, and the problem was frankly -- I know he has been amusing himself on the town no doubt but it will be a burdensome task for anybody to read it in a short period of time.

MR. ORTVED: You want to spoil his weekend; not his evening?

MR. SCOTT: In Chicago there is presumably nothing to do on the weekend.

THE COMMISSIONER: All right, very well. Then until 2:30 this afternoon. We will see how we make out at the end of the day.

---Noon adjournment.



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---Upon commencing after the luncheon recess.

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THE COMMISSIONER: Yes, Mr. Labow.

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MR. LABOW: Mr. Commissioner, I would like to present a problem to you that I perceive regarding Mr. Scott's and Mr. Ortved's submissions this morning.

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THE COMMISSIONER: Yes.

MR. LABOW: I would not like to cross-examine this doctor prior to Mr. Scott cross-examining the doctor because there is no doubt in my mind that he will be asking questions about at least one or two of the children that I represent.

13

14

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THE COMMISSIONER: Yes.

MR. LABOW: And I would like to hear the doctor's answers to Mr. Scott's questions so that I have an overall picture before I am forced to cross-examine this doctor on the same children.

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I understand the scheduling problems and I understand his position fully and it may cut down his cross-examination but I would ask that I not be forced to cross-examine prior to my regular turn, which would be after Mr. Scott and Mr. Ortved.

22

THE COMMISSIONER: Yes. Well, it may be an academic problem.

23

24

25

MR. LAMEK: It may be an academic



1
2 problem, true.

3 THE COMMISSIONER: Because we may not
4 reach either you or them before Monday. I wonder if
5 we could leave it. I have enough trouble making
6 decisions when I have to make them, but I think there
7 is a good deal of merit in what you have to say.

8 MR. LABOW: Thank you.

9 THE COMMISSIONER: So, you can warn
10 Mr. Scott there is a problem that the troops are not
11 falling into line quite as well as they might.

12 Yes, Mr. Olah?

13 MR. OLAH: I am just wondering, sir,
14 I would like to know where I am going to be tomorrow
15 in terms of whether I have to cross-examine or not.
16 It now looks like I would be reached, in the normal
17 course of events, without Mr. Ortved and Mr. Scott
18 proceeding tomorrow afternoon. If that stage arises
19 or that situation occurs, will Mr. Scott precede me
20 or would you like me to precede Mr. Scott?

21 THE COMMISSIONER: Well, I don't think
22 he would be in the same difficulty as Mr. Labow.

23 MR. OLAH: Certainly not.

24 THE COMMISSIONER: So, if you would
25 be ready to go on if you are reached, and the same
thing applies to Mr. Knazan or Ms. Jackman, if you



1
2 can get the word to them. I would like them to be
3 able to go on tomorrow.

4 MR. OLAH: I guess what I am trying
5 to get some feel for, sir, is if we are reached
6 tomorrow afternoon would you ask Mr. Scott to precede
7 me or would you prefer that I precede him?

8 THE COMMISSIONER: Well, I think I would
9 prefer that you preceded him because it's a question
10 of---

11 MR. OLAH: Fair enough.

12 THE COMMISSIONER: But, remember,
13 tomorrow afternoon, now that people have straightened
14 me out on the calendar, it is tomorrow afternoon that
15 we are going to rise early.

16 MR. OLAH: What time will that be,
17 sir?

18 THE COMMISSIONER: About 20 to 4.

19 MR. OLAH: Thank you.

20 THE COMMISSIONER: Yes, Mr. Tobias?

21 MR. TOBIAS: Mr. Commissioner, I would
22 just like to ---

23 THE COMMISSIONER: Second Mr. Labow's
24 motion?

25 MR. TOBIAS: Yes. I am in the same
identical position and have the same identical concerns.



1
2 THE COMMISSIONER: Yes, all right,
3 thank you. But Miss McIntyre you will go on, will
4 you, when you are reached?

5 MS. MCINTYRE: Tomorrow, yes.

6 THE COMMISSIONER: But not if you are
7 reached this afternoon?

8 MS. MCINTYRE: No, I would prefer not
9 to, Mr. Commissioner.

10 THE COMMISSIONER: I think we are all
11 turning into a race of prima donnas in this case.

12 Well, all right, I think that is
13 an academic concern.

14 Yes, all right, Mr. Lamek.

15 MR. LAMEK: Perhaps I should go very
16 slowly.

17 MR. TOBIAS: Filibuster, Mr. Lamek,
18 filibuster.

19 MR. LAMEK: Q. Dr. Hastreiter, could
20 we turn then please finally to the case of Gary
21 Murphy who died of course in the spring of this year.
22 Do you have the chart available to you?

23 I see the Registrar is going to give
24 it to you.

25 Now, let me be clear, Dr. Hastreiter,
Gary Murphy is not one of the children in whose deaths



1
2 we are here concerned, but obviously his death and
3 the opinions that emerged concerning it are of
4 interest as they may bear upon the view that this
5 Commission, the Commissioner may take of some of the
6 deaths in the period in which we are particularly
7 concerned. Now, you were consulted about the death
8 of Gary Murphy, I understand?

9 A. Yes.

10 Q. And you gave evidence at the
11 inquest into the child's death.

12 A. Right.

13 Q. It may be, Doctor, that the
14 easiest way to proceed is for me to ask you if you
15 would be good enough to summarize please the matters--
16 from the child's chart -- that you consider to be of
17 significance in understanding the death of the child.

18 A. Gary was a five month old
19 baby with a very severe form of congenital heart
20 disease associated with an absent spleen, asplenia,
21 and usually asplenia is associated with very severe
22 heart disease, often inoperable. I believe that he had
23 been in and out of the hospital several times and at
24 home he was receiving oxygen at least intermittently.
25 I think I remember this correctly, correct me if I
am wrong, his last admission to the hospital occurred



1
2 then in March, on the 27th of March, '83. He was
3 born on the 1st of October of '82. So, he was five
4 months old. He had signs of an infection, then he
5 was worked up, treated, infection improved and then
6 he developed another infection which appeared to be
7 a GI problem. So, he had his ups and down periods
8 in the hospital. Then approximately one month later
9 on the 23rd of April he died and at that particular
10 time he appeared to be reasonably stable, but of
11 course concerning his general condition he was a very
12 extremely cyanotic baby who required oxygen I think
13 continuously at that time and still had tachypnea and
14 every so often he had infections, too; a complicated
15 picture, plus cardiac failure.

16 Q. So, I think the last important
17 event preceding his death, medical event, had been this
18 GI tract infection which had occurred approximately,
19 almost two weeks earlier when he had repeated vomiting,
20 I believe he had diarrhea, yes, and virus had been
21 isolated from his stool, which was thought to be
22 responsible for it.

23 Subsequently though he had been
24 reasonably stable and then on the 23rd -- maybe I
25 should read some of the note here -- he spent a good
day with his parents, being quite alert, happy;



1
2 Examination was not changed from previous days,
3 showed no signs of heart failure.

4 At ten minutes past 6 p.m., 20 minutes
5 after the parents left he was found by his nurse to be
6 deeply cyanosed and was gasping respiration.
7 Shortly thereafter, breathing -- I don't understand what
8 this means here -- bowels seized -- breathing, he
9 stopped breathing anyway and resuscitative effort were
10 started. He failed to respond and he was finally
11 pronounced dead at 18 hours and 40 minutes.

12 So, this is I think a summary of the
13 main medical events.

14 Q. Right. You have referred,
15 Doctor, to the child's lack of a spleen. What is the
16 significance of that in clinical terms?

17 A. Well, there are two groups
18 of patients who have very severe forms of congenital
19 heart disease and there is a relationship with the
20 development of the spleen and the heart. So,
21 patients who have no spleen very often, not always,
22 but very often will have very severe types of heart
23 disease where the heart, the formation of the heart
24 is interfered with very early in its development and
25 the earlier the interference the more severe the
problem usually, and this is what happens.



1
2 So, in these cases, the heart, instead
3 of having developed its normal functional structure,
4 it becomes sort of like a symmetrical structure,
5 it has two identical sides, it has the pulmonary
6 veins from both sides coming in symmetrically. It is
7 a symmetrical sort of arrangement, so to speak.
8 Usually there is severe pulmonary stenosis or
9 atresia. The division inside the heart has not
10 developed appropriately, so, you may have a single
11 ventricle, you may have a common atrium, you may have
12 a common AV valve. As I mentioned earlier, the symmetrical
13 pulmonary veins, sometimes the symmetrical systemic
14 veins are the most horrible malformations really that
15 can be imagined.
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3 Then there is a group of poly-spleen where the spleen
4 is only partially developed, is very rudimentary.
5 Then you also have severe heart disease but not as
6 severe as when the spleen is totally absent.

7 The prognosis is very poor. These
8 children usually live, you know, only a few weeks or
9 months, or occasionally a little longer than a year.

10 Q. Well, other than as it may
11 indicate very great severity of cardiac problems,
12 is the lack of a spleen in itself of any particular
13 clinical significance?

14 A. Yes, it is, because it also
15 has to do with the immune system of the body and
16 the susceptibility to infections. So these children
17 are much more susceptible to certain types of infec-
18 tion because their immune system is compromised
19 because of the absent spleen.

20 Q. So we have then an extremely
21 sick child with very serious congenital heart defects.
22 I understand from my reading of the chart that it
23 was the conclusion in the Department of Cardiology
24 at the Hospital that this child could not be helped
25 by surgery.

A. That is right. It is
extremely rare these days that a child cannot be



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helped with surgery, usually there is something that can be done. But unfortunately one of the situations is when the pulmonary arteries are so small that there is nothing to connect, they are not large enough to connect them to anything that would provide a good supply of blood to the lungs, and this is the problem.

Q. And the condition therefore being considered inoperable at the Hospital, was there anything in your judgment as a pediatric cardiologist that could be done for Gary Murphy to alleviate his condition in any way?

A. No, I don't believe that anything could be done.

Q. You said that children with the kind of difficulties that Gary Murphy had normally do not live more than a few weeks or a few months.

A. Usually, yes.

Q. At the time of his death I think as we know he was a little less than seven months, or maybe just over six months, but in that order.

Doctor, let me ask you to attempt to do something and it may be rather difficult. I ask you to put out of your mind, please, whatever other



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information you may have going to digoxin levels or anything of that sort, and I want you to do the exercise please that you did with the various children whose deaths you reviewed in 1981 and 1982.

Can you tell me on the basis of Gary Murphy's clinical condition and course, as disclosed by the chart, would you rate it as a small, fair or good probability that this was a case of massive digoxin overdose? Perhaps I should ask you first, how on your scale of 0 to 10 would you rate the severity of this child with his cardiac disease?

A. 9, I mean 10 is --

Q. It is difficult to know what you rate a 10.

A. Yes, 10 would be the extreme, I don't know what to rate a 10, but I would say it is as high as 10.

Q. I'm sorry. Now, on the basis of his clinical condition can you do for this child the exercise that you did and you have explained to us for all the other children?

A. It is very difficult to do.

Q. Yes.

A. I mean, there is no question that his death was expected. On the other hand the



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baby had been reasonably stable for the period preceding his immediate death, but stable for him was - a baby who was extremely handicapped, he was very blue, very cyanotic and it wouldn't take very much to tip him over and produce his death.

So my classification of Gary would probably be in the fair category. That is, I would almost eliminate him, but I would have a little bit of suspicion left because, simply because of the way he died.

Q. When you say the way he died, I take it you are in part referring to the period of relative stability that preceded the arrest?

A. Exactly.

Q. Are you referring to anything other than that?

A. No.

Q. There was not anything about the mode of death that struck you as suggestive of digoxin intoxication?

A. As I had indicated earlier, you know, the unexpectedness and suddenness was always a factor.

Q. Yes.

A. In the consideration of other



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babies, and I must in all fairness say that we have here a little bit of suddenness and some unexpectedness also, in relation to the baby's course just prior to his death.

Q. So you would rate him as a fair probability, and as I have understood your evidence to date that means that you could not entirely exclude the possibility that digoxin overdose was involved in his death?

A. That is correct.

Q. Now, having gone then through the clinical picture, let us adhere as you did with the other deaths, such toxicological information as we have.

It appears from page 142 of the chart and there may not be any need to turn to it, Doctor, that the last ante mortem digoxin level that we have on this child recorded 1.5 nanomoles per litre. As I understand it we are applying a conversion factor of a little over 75 per cent to that, and therefore in the units in which we are accustomed to dealing in this Commission at least, I take it we are looking there at something slightly over 1 nanogram per millilitre. That was on April the 4th, and the child died as you have said on April 23rd and there is no



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3 intervening digoxin level in the chart.

4 So far as post mortem blood levels
5 are concerned there were a number achieved at the
6 Hospital for Sick Children in heart blood, which was
7 drawn on the evening of the day that he died, a
8 level which I have converted, or has been converted
9 to 18.7 nanograms per millilitre was recorded, and
10 sagittal sinus blood taken at autopsy at 4:30 the
11 following morning the same level was recorded 18.7
12 nanograms.

13 In heart blood that was drawn at 6:45
14 on April 24th, initially a level greater than 5
15 nanograms was recorded, and apparently 18.7 nanograms
16 again a remarkable consistency between the assays
17 conducted at the Hospital.

18 A. What was the location of the
19 last one?

20 Q. The heart blood.

21 A. The heart blood?

22 Q. At the Centre for Forensic
23 Sciences, and this is contained, Mr. Commissioner, in
24 Exhibit 232B, and I invite you, if you don't have
25 this information, Doctor, to look over my shoulder
at this one. This is really a compilation of post
mortem digoxin levels on children who died at the



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Hospital after March of 1981, but it includes the levels recorded on Gary Murphy, and they are on page 2, Mr. Commissioner, under No. 31 on the extreme left hand side. A whole series of 2, 4, 6 levels all obtained at the Centre for Forensic Sciences, ranging from 18.9 in a sample drawn from the sagittal sinus, up to 32.2, and these are in nanograms per millilitre in heart blood, levels essentially of the order that we saw in the case of Kevin Pacsai.

Now, Doctor, taking into account the post mortem digoxin levels, let me ask you this question and again it may not be a particularly easy one. If this death had been one of those that you were reviewing in 1981, how would you have classified it in the light of all of the information, clinical and toxicological?

A. Would you give me just a second please.



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Q. Yes, of course.

Mr. Commissioner, Miss Cronk reminds me that Exhibit 226 is the actual report from the Centre for Forensic Sciences setting out these results.

THE COMMISSIONER: 226?

MR. LAMEK: 226.

THE WITNESS: I think maybe before I answer the question...

MR. LAMEK: Q. Yes.

A. ...I could make a few comments. First of all it is very difficult to answer again because it is very difficult to be placed back in a situation that one had been a couple of years earlier or at least a year earlier.

I think in some ways this baby is comparable to Estrella, in the sense that the baby had a very severe type of heart disease and death was more or less expected and was not too far off. He was pretty near the time that one would expect him to die, and the same is true, of course, for Estrella.

In addition this baby had not only severe heart disease but also severe congestive heart failure, and had I think good evidence for pre-renal failure, and if one refers back to what



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CC2 2 happened, what had happened to Estrella, not when
3 the baby died but some week or so before (five days I
4 think it was before the baby's death) the baby had
5 high digoxin levels in the blood, as high I think as
6 about -- more than 9.4 was the highest one?

Q. Yes.

7
A.. And then digoxin was
8 discontinued and it came down.

9 Now if at that particular time the
10 baby had died and one had obtained post mortem
11 samples, the magnitude of the post mortem samples
12 could very well have been similar to what we have here.

13 Of course the baby recovered
14 temporarily (Estrella that is) and eventually died
15 and there is an extremely high level, and we don't
16 know what the source of the sample is exactly.

Q. Yes.

17 A. But I think the babies are
18 comparable in the sense that they both have very
19 severe heart disease, severe congestive heart failure,
20 pre-renal failure and a level which is possibly of
21 comparable magnitude except that we don't have a pre
22 mortem level from Baby Murphy.

On the other hand --

23 Q. There is a sort of symmetry about
24
25



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2 CC3 it, isn't there? We don't have a pre mortem level
3 on Gary Murphy and we don't have at the date you are
4 talking a post mortem level on Estrella?

5 A. Yes.

6 Q. We are talking about her high
7 levels around the 7th of January?

8 A. Right.

9 Q. Yes.

10 A. Now the other thing I think
11 one must do in analyzing these cases and I think I have
12 tried to do it, is look for renal function or
13 evidence of pre-renal failure, and I don't remember
14 that in the series that we looked at with the exception
15 of Baby Estrella there was any baby with really well
16 documented renal failure or even pre-renal that was
17 really clearly documented by laboratory values.

18 Q. Yes.

19 A. I think these factors have to
20 be ruled out because they can explain the rise in
21 digoxin in the body.

22 So my interpretation for Baby Murphy
23 is that very likely these findings can be explained on
24 the basis of severe congestive heart failure with
25 pre-renal failure.

We have evidence that his BUN is



1
2 rising and was quite high at some time, BUN being the
3 blood urea nitrogen, and it is not always easy to
4 interpret all the findings.

5 The serum creatinine was always
6 within a normal range. That means that the kidney
7 itself was probably all right, but the BUN values that
8 I have here on the 28th of March, the 29th of March --
9 then we have the 30th of March and 31st -- they were
a little high.

10 I think the upper level here should be
11 a key, and we have here values of 25, 24, 21, and then
12 we have an 18 and then we have a 15.

13 One could argue that perhaps it is
14 coming down, but laboratory values fluctuate. There is
15 a trend for them to be a little bit on the high side
16 and this would support I believe the concept of pre-
renal failure.

17 Q. Doctor, we are talking about
18 three weeks prior to the child's death are we not
19 at that stage?

20 A. Oh, I am sorry. I thought he
21 died early in April. No, that is right. Do we have
22 any further --

23 Q. I take it you would not place
24 great reliance upon BUN measurements, levels at the
25



1
2 end of March?

3 A. Oh, no, no.

4 Q. Some three and a half weeks
5 before his death?

6 A. No. I have the dates mixed up.
7 We should go as close as possible to
8 the time of his death, but let's see how far we can go.

9 Actually we have here -- okay, we have
10 April 5, 8, 12 and 21.

11 Q. I'm sorry, what page are we
12 looking at?

13 A. This is page 139 of the chart.

14 Q. Yes.

15 A. I think I need some help in
16 translating nanomoles into milligrams. I don't use --

17 Q. Are you looking at the bottom
18 line there?

19 A. Yes.

20 Q. Urea.

21 A. Urea.

22 Q. Is that the same as BUN?

23 A. Yes, but they are expressed in
24 nanomoles.

25 Q. They are expressed in nanomoles
per litre?



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A. Yes.

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Q. Whatever it is.

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A. I didn't bring my chart.

5

Q. Whatever units they are

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expressed in once again as April progresses they seem generally to be declining?

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A. That I don't think is so critical. I think it is more important to determine what the actual level --

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Q. What the units mean?

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A. Yes.

12

Q. Yes, of course.

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A. Because I -- okay, the value, the normal value for urea nitrogen in nanomoles which I don't use usually -- are in millimoles, 3 to 6.5, so they are within still a reasonable range there.

15

16

Q. As recently before his death

17

as April 21?

18

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A. Yes, there is only one that is really close to his death and that is -- there are a couple of potassium levels which are -- no, this is April 8, which is 5.3, and then on April 12 we have 7.7 that is definitely high.

20

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22

Q. Yes.

23

A. I don't have an explanation.

24

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2 THE COMMISSIONER: Yes, that is
3 grossly (spelled grossley) hemolized.

4 THE WITNESS: Oh, yes.

5 THE COMMISSIONER: I didn't know
6 computers made mistakes in spelling but they apparently
7 do.

8 THE WITNESS: Okay, if it is
9 hemolized we cannot use it.

10 MR. SCOTT: They don't make mistakes.
11 They spell good.

12 THE WITNESS: So the laboratory does
13 not support pre-renal failure at this point, but then
14 the baby died on what, the 24th was it?

15 MR. LAMEK: Q. 23rd, April 23rd,
16 St. George's day, Shakespeare's birthday. 23rd I
17 believe, doctor.

18 Perhaps, could we step back for a
19 moment? I take it that on their face the post mortem
20 levels are sufficiently elevated to reasonably
21 strongly suggest there was toxicity?

22 A. Yes.

23 Q. And in light of what you
24 suggest there was toxicity?

25 A. Yes.

Q. And in light of what you told me



1
2 yesterday about Pacsai, or before I get to what you
3 told me about Pacsai, these being post mortem levels
4 what is your best estimate of the ante mortem level
5 immediately before death?

6 A. For Gary Murphy?

7 Q. For Gary Murphy.

8 A. Of course the multiplier could
9 vary from 1 to 3 let's say but if we take an average
10 of about 2, it would be around a little higher than 10.
11 Maybe 12. Between 10 and 15.

12 Q. The same order as you suggested
13 for Pacsai?

14 A. Yes.

15 Q. Yes. And in the light of what
16 you told me yesterday about Pacsai that a level of
17 between 10 and 15 was a level which could be
18 indicative of a lethal level, lethal dose, on the face
19 of it are the levels recorded in Gary Murphy similarly
20 to be viewed as levels which could, unless there be
21 some other explanation, could indicate lethal dose?

22 A. Yes.

23 Q. All right.

24 Now with respect to Kevin Pacsai you
25 told me that the presence of these levels would lead
you to believe that the child had received an



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unprescribed and large -- larger than therapeutic
dose -- of digoxin, and that I take it would be one
explanation for the Gary Murphy levels?

5

A. Yes.

6

7

Q. And the question therefore
becomes I suppose whether there is some other explana-
tion for the Gary Murphy levels.

8

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12

Now at the inquest as you said you
gave it as your opinion that the child was in pre-
renal failure, and if that were so then that would
explain I take it to your satisfaction the elevated
digoxin levels.

13

14

15

Believe me, doctor, I didn't see
until just now the dates upon the BUN readings. Was
your opinion to pre-renal failure based upon the BUN
levels that you referred to a few moments ago?

16

A. No, they don't support it.

17

18

Q. Okay. On what then was your
opinion based that this child was in pre-renal failure?

19

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A. It was based on the clinical
findings, because as I said earlier I would draw a
parallel between this baby and Estrella more or less
because of the lesion, the severity of the type of
lesion and congestive heart failure. I think that
would be a fair comparison.



1
2 I would expect a baby who has this
3 type of situation to develop a low cardiac output,
4 poor renal perfusion, and eventually retain the
5 metabolites and support pre-renal failure. I
6 can't prove it because we don't have the laboratory
7 to support it except at some earlier stage the baby
8 had it intermittent for a short period and this is the
date I was looking at.

9 Q. Yes.

10 A. Which is not the right date.
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But this is the usual course of events in a situation like this. Perhaps before I proceed I should also draw a parallel between this baby and Baby Pacsai. There are similarities in the levels.

Q. Yes.

A. But there are also significant differences.

Q. Right.

A. Baby Pacsai had a healthy, normal heart. This baby had the most horrible type of congenital anomaly and function that one could conceive of, essentially.

Secondly, Baby Pacsai had pre-mortem levels and the highest level was I think larger than 9.4, or around 10.

Q. Over 10, yes.

A. Or higher than 10. This baby did not, although I would expect it to be in the same range -- I forget what the question was now.

Q. Well, you set out to tell me some of the differences between this child and Pacsai.

A. Yes. I think those are the main differences, the fact that Pacsai had a normal



heart and therefore one would expect him to be more resistant to the effects of digoxin in general. We talked about this baby, but one also would not expect him to develop pre-renal failure which here could be a very significant problem.

Q. All right. But apart from that perhaps greater propensity to develop pre-renal failure in the case of Gary Murphy, the two distinctions that you have suggested, Doctor, don't explain the levels in Gary Murphy, do they?

A. Oh, certainly.

Q. Well, the fact that one has a normal heart and better able to resist toxicity.

A. No, no, that doesn't explain the level.

Q. No, it doesn't explain the level.

A. No, that doesn't explain the level, but the pre-renal failure -- no, the normal heart explains the good renal profusion.

Q. Yes, okay.

A. And therefore the lack of propensity to develop pre-renal failure. On the other hand, I think it is quite conceivable that in Gary Murphy a level of, let's say, between 10 and 15



1
2 pre-mortem would have been explained on the basis of
3 pre-renal failure. It is not a common event, although
4 high levels are common in pre-renal failure. This
5 level of magnitude may be a little excessive. I have
6 never seen such elevated post-mortem levels. I have
7 seen pre-mortem levels around 10 or perhaps higher,
8 I am sure I have seen them higher than 10 pre-mortem
9 associated with renal failure.

10 So, that to me would be the best
11 explanation. I should, however, emphasize that I
12 think we are talking about different periods of
13 time and different circumstances. I think when we
14 look at the other children, as I have said earlier,
15 my main concern was not to miss any cases that possibly
16 could have been intoxicated. Here I think we had a
17 situation a year later or so where the hospital was
18 monitoring the children very, very closely. The
19 hospital was aware of the problem and so forth and
20 we were also concerned about, you know, not calling
21 a case toxic when the possibility of nontoxicity
22 existed.

23 Q. Yes. Doctor, I want to come
24 back to that but could I for the moment come back to
25 this distinction that you drew between this child
and Pacsai.



1
2 You are absolutely right, of course,
3 we do not have an ante-mortem level on Gary Murphy
4 as we did on Pacsai, but in light of the post-mortem
5 levels there is every reason to believe, is there not,
6 that had blood been drawn shortly before the child
7 died, it would have shown the same order of concentra-
8 tion as we found in Pacsai?

9 A. Yes.

10 Q. And that would still have
11 called for an explanation as to how it got there.
12 So, the lack of an ante-mortem sample, it is a
13 distinction, but I am not quite sure what flows from
14 it. We still have to explain the presumed ante-mortem
15 level that was almost certainly there, do we not?

16 A. Yes.

17 Q. Now, in terms of a propensity
18 of a child with poor cardiac output to develop pre-
19 renal failure because I suppose almost ex hypothesi
20 the kidneys are probably not being sufficiently
21 profused.

22 A. Yes.

23 Q. I have to take you back to your
24 evidence in the preliminary inquiry when you remember
25 I read it to you yesterday when you were being asked
about the ante-mortem levels on January 7th in Estrella.



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2

A. Yes.

3

Q. As I understood your evidence

4

yesterday at the preliminary, as we read it yesterday,

5

it was that the news that that level may have been

6

greater than ten made the diagnosis of pre-renal

7

failure considerably less likely in your mind?

8

A. I don't remember the exact
words. I don't know if I said considerably.

9

Q. Well, perhaps we should look

10

at it.

11

A. Perhaps we should review it.

12

Q. It may be important and it

13

deserves to be looked at and I think rather than

14

paraphrased by me. Now, all I have to do is find it.

15

It shouldn't take me too long.

16

Yes, Page 37 of Volume 34. The
question was:

17

"Are you going to stick with your

18

original indication that these levels

19

in Janice Estrella during January 7,

20

8 and 9 were probably due to pre-renal

21

failure on the part of that child?"

And your answer was:

22

"A. I would still say that the

23

24

25



possibility of an overdose of digoxin exists, but I cannot be sure about it. I think the levels of higher than 10 would make me very suspicious. It would be unusual, very unlikely to find a level higher than 10 in pre-renal failure."

Now, that was your evidence at the preliminary inquiry. Have you any cause to change that view as a general statement as to the likelihood of pre-renal failure producing a concentration greater than 10?

A. No, I don't think I have any reason to change that. It is quite unusual but it can happen.

Q. Now, I recognize, Dr. Hastreiter, what you are thinking about this child, that the condition of Gary Murphy's heart would have made adequate perfusion of the kidneys and every other organ of his body relatively unlikely and it is poor perfusion of the kidneys that essentially is responsible for pre-renal failure.

Your suggestion, as I understand it, therefore, is that because there would be a propensity for this child to have pre-renal failure, that may well



1
2 be the explanation for the presumed ante-mortem
3 levels which existed in him of digoxin.

4 A. At post mortem.

5 Q. Well, I am presuming it would
6 be ante-mortem.

7 A. Oh, yes, fine.

8 Q. If I understand your position
9 correctly.

10 A. Yes. I should perhaps say that
11 children who have a situation like this will not
12 uncommonly develop intermittant high levels.

13 Q. Yes.

14 A. Levels consistent with pre-
15 renal failure, also high digoxin levels and then come
16 down, go up again. So, it fluctuates to some degree.
17 The fact, obviously, it would have been a much
18 stronger case for me to have laboratory support for
19 this evidence of pre-renal failure. I am the first
20 to agree that we don't have that here.

21 Q. Sure. But fairly, Doctor,
22 you do have laboratory data which seem to indicate
23 that on a prior occasion.

24 A. On a prior occasion, yes.

25 Q. There had been such an
episode.



1

2

A. Right.

3

Q. And although in a sense it is

4

speculation I take it your position is that there

5

having been laboratory evidence of what you would

6

describe as pre-renal failure on an earlier occasion

7

given the general condition of this child it is

8

entirely plausible the condition would recur.

9

A. Yes. However, I would like to

10

emphasize again that I had never seen a level of this

11

magnitude in post mortem blood in a child who was

12

receiving therapeutic digoxin.

13

Q. Yes.

14

A. Very clearly, I want to make it

15

very clear. In fact, if you look at my own figures

16

and our publications you will see that the highest

17

level we have found in post mortem blood were 14 and

18

these were usually newborn, premature babies, actually,

19

who had the highest level.

20

Q. Yes.

21

A. And I think the highest in

22

a non-premature baby was around 12. So, a level of

23

25 or 24 and there is even one of 32 is extremely

24

unusual. However, you know, I think it is still within

25

the realm of possibility. If you take a multiplier of

let's say the usual 2 that we have been using or, if we



1
2 want to stretch it a little, if we took a multiplier
3 of 3, then the level would be lower. Even if we
4 don't stretch it, a level of 10 pre-mortem, 10 or
5 even 12, does occur very rarely with pre-renal
6 failure.

7 Q. Yes.

8 A. So, I don't think it can be
9 ruled out; whether it is the most likely possibility
10 I think can be argued.

11 Q. In your judgment what is the
12 most likely explanation?

13 A. I think considering the whole
14 picture of this child ---

15 MR. SCOTT: I'm sorry, I don't under-
16 stand the question. Is my friend asking most likely
17 now or most likely when he voted at the September
18 meeting?

19 MR. LAMEK: No, he didn't vote on
20 Gary Murphy at the September meeting.

21 THE WITNESS: No.

22 MR. SCOTT: No, but if he did vote.

23 MR. LAMEK: Oh, no. May I ask now?
24 Let me start with now, today, Dr. Hastreiter, what in
25 your best judgment is the most probable explanation for
the elevated digoxin levels in Gary Murphy?



1
2 A. I think in the whole picture
3 it would still be one of pre-renal failure. Of course,
4 if there was any possibility of further investigation,
5 toxicology, I would certainly recommend it, I would
6 advise it.

7 Q. Of course.

8 A. And I think we should have
9 as complete an investigation as possible. But since
10 there was nothing else, I don't think, available to
11 pursue it, my feeling would be that pre-renal failure
is probably the best explanation.

12 Q. Okay. Now, I am not suggesting
13 that some of the questions I have been asking you in
14 the last few minutes have been particularly easy, but
15 let's go back to the ones that you and I both label
16 as difficult.

17 It may not be possible for you to
18 put yourself into the 1981/1982 context with this
19 case and, if it isn't you must tell me. How would
you have classified this death in 1981 or 1982.

20 A. Yes, I think it is very dif-
21 ficult to go back and situate one's self in that
22 climate, that position of pressures and so forth, but
23 I am quite certain that if I could transfer myself
24 back into that period I would probably have classified
25



11 1 him differently, certainly as a suspicious case.

2 Q. Dr. Hastreiter, Dr. Kauffman
3 who has given evidence here also gave evidence at the
4 inquest of Gary Murphy and I believe you heard his
5 evidence.

6 A. Yes.

7 Q. In fact, that evidence which
8 I am interested in is found at Pages 39 and 40 of the
9 transcript.

10 A. I didn't hear his evidence,
11 no.

12 Q. You read it or you heard about
13 it.

14 A. Yes, I did.

15 Q. It is your understanding I
16 take it that he expressed the opinion that the most
17 likely explanation in his judgment for the elevated
18 digoxin levels in Gary Murphy was that as the baby's
19 condition gradually worsened with continuing and pro-
20 gressive damage to the heart muscle, increasing
21 oxygen shortage, reducing cardiac output, lessening
22 profusion of tissues, there was progressive tissue
23 damage and a progressive weakening of digoxin binding
24 in the tissues causing a progressive release of digoxin
25 which eventually wound up in the serum.



12 1
2 Is that your understanding of Dr.
3 Kauffman's best judgment as to the cause of the
4 elevated digoxins?

5 A. Yes. It is my understanding
6 that Dr. Kauffman proposed several explanations.

7 Q. Yes.

8 A. I think there were five or
9 six and this was the last one and his favorite
one.

10 Q. Yes. Now, do you have a view
11 upon the likelihood of that being a, well, do you
12 regard it as an acceptable explanation of the elevated
13 digoxin levels?

14 A. Well, as you know, I have great
15 respect for Dr. Kauffman, I really like him, I think he
16 is a very good pharmacologist. I don't quite agree
17 with him here because I think it is very hard to prove
18 what he is saying and this is my disagreement.
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It is a good theoretical speculation, but I think in practice it would be very difficult for him to prove that. My hypothesis of renal failure has not been proven by any means either, but at least it is a practical every day situation that we encounter. I am not sure at all that what Dr. Kauffman said occurred. It occurs in theory but whether it occurs to the point where you would see elevated levels of this magnitude, nobody knows.

Q. Let me understand you, in comparing your two views of the thing, you are telling me that although in theory what Dr. Kauffman is positing may well occur, there is no evidence that it does occur?

A. Right.

Q. Let alone whether it did occur in this case.

A. Right.

Q. And your position on the other hand of pre renal failure, it is certainly well known that pre renal failure may cause an elevation in serum digoxin, what is not known is whether it actually did in this case although there is evidence to suggest it may have.

A. It may cause an elevation



Hastreiter, dr.ex.
(Lamek)

1
2 of digoxin in blood of this magnitude.

3 Q. I suppose there is necessarily
4 therefore an element of uncertainty, and to a
5 degree mystery about the Gary Murphy death?

6 A. Definitely.

7 Q. When we speak of Murphy
8 and Pacsai, or Murphy and Estrella, or any of
9 those people, I am obliged to follow up something
10 you said a moment ago, Dr. Hastreiter, because I
11 think it goes to the way in which we must approach
all of the expert evidence that we have heard.

2
12 You referred to a couple of points
13 of distinction between Gary Murphy and Kevin
14 Pacsai. Is it also an important point of distinction
15 between the two that when Kevin Pacsai died, and
16 especially when his chart was reviewed, the
17 atmosphere was one of great suspicion. Your task
18 you very forthrightly said was to look for any
19 possible suggestion of digoxin intoxication in
20 those charts. We were looking for an explanation
and an apparent epidemic and there had been
murder charges already laid.

21 When Gary Murphy died, when his
22 case was reviewed and the Inquest was held, although
23 there was obviously enormous concern and apprehension,
24
25



1
2 the climate if I may say so appeared to be to
3 dispel suspicion if it were possible to do it,
4 to explain matters that might otherwise be suggest-
5 ive of an overdose.

6 Believe me, Doctor, I don't want
7 to be offensive, I am not suggesting any conscious
8 lack of objectivity on your part or on anyone else's
9 part, but can we be sure that the climate may not
have influenced judgment in marginal cases?

10 A. No, I don't think we can.
11 I think we had great pressures placed upon us in
12 Gary Murphy's situation, where there was a great
13 deal of, as you say, apprehension, not only local
14 but also public apprehension and it was a very
difficult decision to make.

15 Q. Of course, I am not suggest-
16 ing for a moment, Dr. Hastreiter, let me be plain,
17 I am not suggesting for a moment that your
18 conclusions about the death of Gary Murphy are
19 wrong, I don't suggest that. But in light of the
20 Gary Murphy case, do we all, and with respect I
21 include you, do we all not need to regard the
22 expressions of suspicion about many of the babies
23 whose deaths we have been discussing in the last
24 couple of days as perhaps unconsciously influenced
25



Hastreiter, dr.ex.
(Lamek)

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2 to some degree by the then prevailing climate
3 and the viewpoint from which you were asked to
4 approach those cases?

5 A. I believe so. I would
6 perhaps though emphasize that there were cases in
7 which toxicology was available.

8 Q. Of course, yes.

9 A. And these cases I would
10 exclude from your remarks.

11 Q. Yes, I understand that.

12 A. For the other cases in which
13 there was just clinical information available I
14 think that is a significant factor.

15 Q. It is fair to say, is it
16 not, that many of the children whose deaths you
17 regard as suspicious at one level or another,
18 were in many respects far poorer candidates for
19 suspected digoxin overdose than Gary Murphy was.

20 A. My understanding, my function
21 at that particular time was one of trying to screen
22 the cases, so that further investigations could be
23 performed, hopefully toxicology also, and in fact
24 some bodies were exhumed and in some other cases
25 we found specimens that could be used for this
purpose. So we were trying to select the cases in
whom this, you know, should be pursued.



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Q. Doctor, I hope I have made it clear I am not in the slightest critical of what was done.

A. No.

Q. I assure you of that.

A. Yes.

Q. I guess the thing upon which I invite your agreement is this; that the lesson of Gary Murphy is that we have to be cautious in looking at any particular case from the epidemic period where there is not clear toxicological evidence, lest we too easily be suspicious on insufficient grounds, is that fair, would you agree with that?

A. Could you repeat that, please?

Q. Yes, we have got to be cautious in looking at any particular case where there is no clear toxicological evidence, cautious lest we be too easily suspicious on insufficient grounds?

A. I think that is a correct observation.

Q. Doctor, I am very grateful to you and I think we have timed one of those endings magnificiently again.

A. May I make one more remark?

Q. Of course, yes.

A. I think it is very important



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3 to place everything in the context not only of time
4 and period --

5 Q. Yes.

6 A. But also of the, let's say
7 clinical and toxicological findings.

8 Subsequent to these deaths that
9 occurred on Wards 4A/B, a lot of research has been
10 done, a lot of studies, local studies as well as
11 other places, have been done. One of them consisted
12 of obtaining post mortem bloods on every baby that
13 died, as you very well know.

14 Q. Yes.

15 A. At the hospital.

16 Q. Yes.

17 A. And I was given I think the
18 figures on - I forget the exact number, 267 I think,
19 babies that had died subsequently. If you look at
20 these figures you will find that there were only two
21 out of 267 where the levels were higher than 10 post
22 mortem, and one was 13.5 and this was gutter blood
23 I believe, and then there was 1 of 12 point something
24 that was heart blood.

25 So when you then appear with a level
of 20 or 30, or even higher, such as 70 or 100 like
we have encountered, it is obviously totally out of



that picture.

Now, I must admit though that in the case of Gary Murphy still remains a mystery in my mind, I don't have a complete and clear explanation for it.

Q. You have given as your best judgment of the thing, Doctor, thank you very much.

A. Yes.

THE COMMISSIONER: We will take 15 minutes.

MR. LAMEK: Thank you, sir.

---Short recess.

---Upon resuming.

THE COMMISSIONER: Yes, Mr. Hunt?

MR. HUNT: Thank you, Mr. Commissioner.

EXAMINATION BY MR. HUNT:

Q. Dr. Hastreiter, my name is Hunt and I represent the Attorney General, Crown Attorneys and the Coroners and we have not met before.

A. No.

Q. I'm very pleased to meet you.

A. Thank you.

THE COMMISSIONER: You should be friendly.

MR. HUNT: You probably thought you



Hastreiter, ex.
(Hunt)

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didn't have a friend in the room.

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MR. SCOTT: Don't be too sure you are
pleased to meet him.

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MR. HUNT: Q. Doctor, I first want
to deal with some of your background in the area
of digoxin, because unlike all of us in this room,
and unlike most of the doctors that we have heard
from your interest in research in the pharmacokinetics
of digoxin didn't start with this particular case,
did it?

11

A. No.

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Q. In looking through your
curriculum vitae, I noticed that you have under the
heading of "Presentations" some nine that relate
directly to digoxin. Under "Abstracts" you have
seven abstracts published relating to your work in
the area of digoxin and the pharmacokinetics of it.
Under the heading of "Publications" you have some
six that deal with digoxin. On my reading of it
this goes back to 1971 or earlier?

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A. Yes. I think the curriculum
that you have is a little old, because it should
be more.

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Q. It should be more than --

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A. Yes.

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Q. Would it be fair for me to suggest that you were one of the pioneers in the area of research into pharmacokinetics of digoxin as it related to infant?

A. Oh, as it relates to infants and children probably. You see the methodology for analysis of blood levels of digoxin was developed around the time when I started. Before then it was very difficult, there was no real good method available. It was in 1970 or so that the method was developed, and in 1971 the papers dealing with clinical studies on digoxin started appearing, and our group was one of the first to study it in children and babies.

Q. Can I ask you, sir, how it was that you came to be interested in this particular area of scientific research?

A. There were several reasons. I think one of the main reasons was that the pharmacologists at our institution had themselves develop a radioimmunoassay for digoxin RIA method. So they were producing their own antibodies, and in this way we were able to very early in the game make these measurements.

A young man by the name of Krasula who



1
2 is listed in several of these papers was doing his
3 Doctorate in Pharmacology, his Ph.D., and
4 his Thesis was, his whole work was primarily
5 digoxin and I happened to work with him. He asked
6 me to colloborate with him.

7 Then Dr. Soyka who is a pharmacologist,
8 also was well known in the field, he was
9 in our institution and he was Dr. Krasula's tutor,
10 so he was his teacher. There were several people who
11 happened to be interested in this particular drug
12 at that particular time. For me it was interesting
13 because it was a very important drug in my field
14 and I thought it was an interesting type of research
15 to do.

16 Q. Now has that particular group
17 that started in this area of research in 1970 continued
18 to work together through the last decade?

19 A. No. We worked together perhaps
20 for five years or so, then Dr. Krasula finished
21 his studies and he moved on to become, into the
22 pharmaceutical industry. He is now, he has a good
23 position in one of the Chicago pharmacceutical
24 laboratories.

25 Dr. Soyka also moved away, he became
Chairman of the Department of Pediatrics at the



1
2
3 University of Vermont and then Chairman of the
4 Department of Pharmacology, and then he eventually I
5 think moved to Mead Johnson Industries, the baby food
6 industry and he is now a member of their staff. So
the same group is not together any more.

7 Q. But you have continued your
8 research either alone or with other doctors since?

9 A. Yes, with other pharmacologists
10 and clinicians, biochemists and so forth.

11 Q. Well, without wishing to
12 embarrass you, sir, could I ask you whether in
13 March of 1981 was there any individual or perhaps
14 any group of individuals other than yourself who had
15 greater experience in the research into the pharmaco-
16 kinetics of digoxin as it related to infants?
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A. Oh, I am sure there must be.

There is a Swedish physician by the name of Wettrell who is quite well known in the field.

Q. So far as North America is concerned are you aware of anyone else who has your experience in dealing with this particular area?

A. I think this is a very difficult question to answer. I am sure there are others who have done work, but I haven't really, you know, counted... There are several who have done different types of work with digoxin. Some of them have been clinical; others have been more laboratory; and others have been electrophysiological, so I don't know if there is anybody has done more or less. That I find a little difficult to answer.

Q. But could I put it to you this way, sir: I take it it didn't necessarily come as a great surprise to you to be approached by the Crown Attorney seeking advice with respect to digoxin intoxication in infants given your experience and research in the area?

A. That is true.

Q. Now, you indicated to my friend, Mr. Lamek, on Monday that you were asked



1
2 by the Crown Attorney to conduct a review of the
3 cases from a medical and toxicological point of view.
4 This is initially when you were approached.

5 A. Right.

6 Q. And I take it that you
7 certainly felt that that was an appropriate request
8 to be made of you having regard to your experience
9 and expertise in this particular area?

10 A. Yes, I thought so.

11 Q. And you indicate as well that
12 you were asked specifically in cases where there
13 was toxicological data available to form and express
14 any opinions about the size of dose, the method of
15 administration and the time of administration?

16 A. Right.

17 Q. And again, sir, I suggest
18 that certainly you felt that this was also an
19 appropriate request of you having regard to your
20 experience and research in this particular area?

21 A. Yes. I think that this was
22 a very difficult problem, especially to try and
23 determine the time and dose and support ---

24 Q. I am not suggesting it was
25 an easy task that was being asked of you or that
it would necessarily be easy for you ---



1

2

A. In my ---

3

Q. - but having regard to your

4

experience it was not inappropriate as far as you
were concerned?

5

A. No.

6

Q. To ask you to attempt to

7

do it?

8

A. No.

9

Q. I suppose the reason that

10

I ask you that, sir, is because we have heard from

11

a number of doctors here, many of them cardiologists

12

at the Hospital for Sick Children, who have

13

indicated that they did not feel that it was

14

appropriate for them to express opinions on such

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things as size of dose, the method of administration,
time of administration, inasmuch as they weren't

16

pharmacologists.

17

Now in fairness, none of them had

18

the experience that you have had in terms of

19

research into the pharmacokinetics of digoxin, but

20

that leads me to ask you, sir, for your purposes

21

in conducting this review I take it you didn't

22

feel it necessary to have with you a pharmacologist?

23

A. I had always worked with

24

pharmacologists, and I did not directly have

25



1
2 pharmacologists with me, but I have consulted with
3 my friends who are pharmacologists quite frequently,
4 and when I had any questions I would consult them.

5 Q. But you didn't feel it
6 necessary to have someone working with you on a
7 retainer basis, something of that nature, in terms
8 of doing your review?

9 A. I didn't - well, see, I of
10 course was not aware of what the budget was and
11 what the capabilities of the Crown and the Police
12 were at the time. I certainly welcomed the
13 addition of Dr. Kauffman and the others later on
14 who were invited to join, but ---

15 Q. I think, sir, in fairness
16 you in the summer of 1982 agreed with the choice
17 of Dr. Kauffman, and you even took some steps to
18 assist in trying to find ---

19 A. Exactly.

20 Q. - an appropriate pharmacologist
21 at that point in time?

22 A. That is right.

23 Q. But what I am really
24 suggesting, sir, is up to the point in time of the
25 end of the preliminary hearing you did not feel the
need to have a pharmacologist working with you and



Hastreiter, ex.
(Hunt)

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2

assisting you on a regular basis?

3

A. I was never really asked.

4

I never suggested or perhaps I may have - we may have discussed this possibility, but I don't remember ever having asked or suggesting that a pharmacologist be added to the team.

5

6

7

8

Q. So prior to the summer of 1982 after the preliminary hearing was over, you don't recall suggesting that steps be taken to locate and retain a pharmacologist?

9

10

11

A. Oh, after the preliminary hearing?

12

13

Q. No, I am suggesting up till the end of the preliminary.

14

15

A. Up to end.

16

17

Q. But after that when the next review began there was in fact a discussion that took place that involved selecting an appropriate person.

18

19

A. Right.

20

Q. Is that right?

21

A. . . Yes.

22

23

Q. And at that time you suggested a number of names, and even enquired into the backgrounds of a number of people in order to

24

25



1
2 attempt to isolate a suitable candidate. Is that
3 fair?

4 A. That is correct.

5 Q. Now, Doctor, I want to deal
6 with the Estrella case and I want to go back over
7 some of the ground that was covered by my friend
8 Mr. Lamek.

9 Now I don't do this without some
10 thought, Mr. Commissioner, but it appears that there
11 may have arisen a misunderstanding in the course
12 of Dr. Hastreiter's evidence yesterday with respect
13 to what he knew at the time of the preliminary
14 hearing, and that may or may not have been
15 exacerbated by Mr. Scott's press conference on the
16 matter which he apparently held yesterday.

17 But in any event the reports in
18 the media today suggest some facts that simply are
19 not accurate that I think we must go into again.

20 Now, sir, you gave your evidence
21 yesterday that your present opinion with respect
22 to Baby Estrella is that that particular case is
23 one that has a rather low index of suspicion?

24 A. Right.

25 Q. And I appreciate that is
summarizing it down to the bare bones?



1

2

A. Yes.

3

Q. I am not trying to trick

4

you with that or anything.

5

A. No.

6

Q. But that is a fair summary

7

of it?

8

A. I think we have to be very

careful with the wording of these statements because

9

Q. Sir, you will have to be

10

careful not just with me but with everybody else

11

here.

12

A. I agree.

13

Q. And I suggest that whenever

14

anybody puts to you what you said, ask them for the
page and make them show it to you.

15

A. Right. I have been frequently

16

misquoted.

17

Q. I don't think it will have

18

ended at this point either, sir.

19

All right. What I wanted to deal

20

with first of all, sir, is the situation that

21

existed at the time of the preliminary hearing

22

insofar as your knowledge and understanding of

23

the sample, and when I talk about the sample in

24

Estrella, we are talking about the 72 level found

25



1
2 in the sample taken from the pelvic cavity.

3 Now in giving your evidence yesterday
4 at Volume 76, page 6705 and following, and I will
5 just read a couple of questions and answers to you
6 to sort of set the stage for some further questions.

7 At 6705, beginning about line 14,
8 in direct examination by Mr. Lamek, you said - or
9 the question was put:

10 "Q. All right. In neither your 1981
11 or your 1982 report, Dr. Hastreiter,
12 do you make any reference to the
13 possibility that the 72 nanogram level
14 may be suspect because of the impurity
15 of the sample in which it was
16 measured. Were you aware of the source
17 of the sample when you wrote your two
18 reports?

19 A. I think I became aware of the
20 source of the sample at the preliminary
21 hearing, at which time the sample
22 was said to have been obtained from
23 the abdominal cavity.

24 Q. Yes.

25 A. And I believe it had been
thought to have been contaminated by



1
2 "ascitic possibly ascitic or edema
3 fluid or both. In my opinion at that
4 time this contamination with ascitic
5 or edema fluid should not have
6 increased the concentration of digoxin
7 in blood; I thought it was blood.
8 Now, it was much later that I found
9 out about this gutter blood hypothesis
10 which I believe was validated
11 eventually where it was found that
12 gutter blood appears to concentrate
13 digoxin to an extent that the con-
14 centration be as much as 2, 3, 4,
15 10 times higher occasionally, and
16 that there was one instance in which
17 the level was extremely high in gutter
18 blood and not in heart blood.

19 Q. You are referring there to
20 what we call the gutter blood study?

21 A. The gutter blood study.

22 Q. Conducted by Mr. Cimbura in
23 the Pathology Department at the
24 Hospital?

25 A. Right.

Now that of course occurred much later



1
2 "and I had no knowledge of it. This
3 occurred after the preliminary hearing."

4 Now if I may just stop there for a
5 moment, sir, I suggest that at the time of the
6 preliminary hearing when you gave your evidence there,
7 you were aware as a result of evidence that had been
8 given by Dr. Taylor that the sample was taken from
9 the pelvic cavity, and that it may have been slightly
10 contaminated by edema and/or ascitic fluid, and that
11 that possibility was one you considered at that time
12 but in your opinion contamination from those sources
13 ought not to have increased the concentration of
14 digoxin in the blood.

15 Would that be a fair statement of
16 what you were aware of and your position at the
17 time you gave your evidence?

18 A. That is correct. I wasn't -
19 I didn't remember whether it was abdominal or
20 pelvic cavity, but otherwise it is accurate.

21 Q. All right. Now at the
22 preliminary hearing Dr. Taylor testified and he
23 testified in Volume 17 of that transcript, Mr.
24 Commissioner, on February the 15th, 1982, and there
25 are really three places in his evidence where he
referred to the sample taken from the pelvic



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Hastreiter, ex.
(Hunt)

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cavity.

3

Those are on pages 113, line 29, to

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114, line 14, page 115, line 4 over to page 116,

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line 6, and page 121, line 4 through to line 21.

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Q. Now, without reading all that, if I can summarize it, and my friends have the transcript, so, they can correct me if I am wrong, in essence what Dr. Taylor says was that he obtained this particular sample from the pelvic cavity and that it was most likely contaminated with edema fluid from the tissues and ascites fluid from the cavity itself. Now, at that point in time, sir, Dr. Taylor made no reference whatsoever to possible contamination of this sample by any other substance such as fecal material or urine.

A. Correct.

Q. And is that your understanding then of the evidence that you were aware of by the time you testified at the preliminary hearing?

A. Yes.

Q. Now, also at the preliminary hearing and prior to you testifying Dr. Mancer also from the pathology department testified and that, Mr. Commissioner, is found in Volume 2 and the particular -- which was on the 14th of January, 1982 and the particular portion I am referring to is Page 435 beginning at Line 10 over to Page 436 at Line 15. I won't read all of that, but in essence what Dr. Mancer says was that yes, he was aware that



1
2 the sample was contaminated but in his opinion the
3 reading of 72 was probably low as a result of the
4 contamination rather than it being artificially high
5 as a result of it.

6 Now, is that your understanding of
7 the evidence that you were aware of at the time you
8 testified?

9 A. Yes.

10 Q. So, sir, I suggest to you that
11 at the time you gave evidence at the preliminary hearing
12 you were aware of where the sample was taken from
13 in the body.

14 A. Yes.

15 Q. You were aware as to what the
16 evidence of the person who took it was, i.e., Dr.
17 Taylor, with respect to what it might have been
18 contaminated with and, that is, ascitic or edema
19 fluid and you were aware that the opinion of Dr.
20 Mancer from the pathology department was that that
21 contaminated sample probably gave a lower reading as
22 a result of the contamination.

23 A. Yes.

24 Q. All right. Now, the confusion,
25 sir, may have arisen inasmuch as Dr. Taylor also
testified here at these proceedings on October 3rd in



1
2 Volume 43, Mr. Commissioner, and I am looking at
3 Page 8634. He was asked by Ms. Cronk in direct
4 examination whether there was in his view any risk
5 of contamination. He indicated that the blood in the
6 pelvic cavity was almost certainly contaminated with
7 tissue fluid, ascitic fluid, and he went on to add
8 probably water that was used to wash the body down,
9 and then when asked anything else he said it is
10 possible that even fecal material could have contaminated
11 the fluid since the bowel was cut during the performance
12 of the autopsy, urine is a possible contaminant.

13 Now, sir, I ask you whether prior to
14 giving your evidence at the preliminary hearing you had
15 heard anyone from the hospital suggest that the sample
16 was contaminated with anything other than edema
17 fluid or ascitic fluid?

18 A. No.

19 Q. Now, sir, the first time that --
20 or could I ask you when was the first time that you heard
21 any suggestion that the sample was contaminated in
22 some way that made it unreliable?

23 A. Well, the first time I heard
24 about gutter blood so-called was at a meeting that
25 was held at the hospital following the preliminary
inquiry, following the completion of the inquiry.



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I don't remember the exact date that it was held.

Q. So, this was after the preliminary hearing?

A. Yes.

Q. And this is at a meeting at the hospital. There is now information given to you that suggests this sample is unreliable.

A. No, this was only the first time I heard about the fact that they were doing some studies with gutter blood, what they called gutter blood, and they were planning, or were just starting to do studies in rats and they were also starting to collect some human samples, hypothesizing that possibly these samples would have -- this was a hypothesis then.

Q. Yes.

A. Would have higher values of the digoxin than actual blood drawn from other locations. Subsequently at other meetings at the hospital, I don't remember the dates, unfortunately, but this was considerably later, I heard that they had collected some data now in rats and found that there was a multiplier; in other words, the gutter blood sometimes was several times higher than blood. However, the human studies, they had also done some and



1
2 I think Mr.Cimbura had analyzed some of these specimens,
3 had never shown very high levels. The levels may have
4 been a little higher than blood, but I was never
5 terribly impressed by the magnitude of these levels.
6 It was only now at this hearing here that I found
7 out that they had one extraordinarily high level of
8 167, I believe, in a human case of gutter blood.

9 Q. The first time you ever heard
10 about that was when you came here to give evidence?

11 A. Yes.

12 Q. All right. Well, we will get
13 to that in a minute.

14 A. Yes. This was only one sample
15 and I expressed my concern about it because I do not
16 generally like to make judgments on the basis of just
17 one isolated sample. However, I think in all
18 fairness to this situation if the possibility exists
19 then I think the value that we had attributed to our
20 original sample has to be considerably less than it
21 was.

22 Q. Well, we will get to that in
23 a moment, but I want to ask you, sir. The evidence
24 of Dr. Taylor that I read to you in Volume 43 concern-
25 ing the taking of the sample was that, and I will just
read the answer again:



1
2 "It is possible that even fecal
3 material could have contaminated the
4 fluid since the bowel was cut during
5 the performance of the autopsy, urine
6 is a possible contaminant."

7 Have you ever heard it put by anyone any higher than
8 that, that it is possible that fecal material or urine
9 could be a contaminant?

10 A. No.

11 Q. All right. You see, the reason
12 I raise the concern is when Dr. Taylor first testified
13 at the preliminary hearing in early 1982, which is
14 a year and a half before he testified here, he made
15 no mention of the possibility of fecal material or
16 urine.

17 A. No. In fact, I never heard
18 this mentioned before.

19 Q. All right. Now, the study itself,
20 sir, have you seen the results? This is the gutter
21 blood study that the hospital and Mr. Cimbura conducted.
22 Have you actually seen the results?

23 MR. ORTVED: That is Dr. Bennett's
24 study, isn't it?

25 MR. HUNT: I'm sorry, my friend, I
think he wants to speak to me.



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MR. SCOTT: No, no. Mr. Hunt can show him a copy, it is Mr. Cimbura's work and we have no objection if he sees a copy.

MR. LAMEK: It is in evidence.

MR. SCOTT: Yes, I know, but if Dr. Hastreiter wants to see Mr. Cimbura's study I don't see any reason why he shouldn't.

MR. HUNT: I agree with my friend.

MR. SCOTT: The person to ask is Mr. Cimbura.

THE COMMISSIONER: What's the exhibit number?

MR. HUNT: No, my friend started off, his comments started off as, "Surely the Crown should have done something" and perhaps I jumped to the wrong interpretation of what my friend was suggesting.

Q. Sir, have you seen ---

A. I have only seen a portion of this study, I have not seen the whole study. In fact, I think all I saw was this one high figure and then I understand that this same specimen was from the same patient and was obtained three hours later and it was low, it was 17 instead of 167.

Q. All right.

THE COMMISSIONER: What is the



1

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exhibit number?

3

MR. HUNT: So, that is Exhibit 213,

4

Mr. Commissioner, and perhaps Mr. Elliot could provide
that exhibit to the witness.

5

MR. LAMEK: The last page of it.

6

7

MR. HUNT: Q. Yes, I think if you turn
to the last page.

8

A. Yes.

9

10

Q. So, I take it, sir, the last
page of Exhibit 213 is the page we are referring
to. Is this the document that you saw prior to giving
your evidence?

11

12

A. I don't remember having seen this
document. Maybe I did, but if I did it was a very
brief...

13

14

15

Q. Perhaps I had better make sure
we are looking at the same page.

16

17

A. Yes. Yes, it is the same page.

18

19

Q. Yes, all right, we are looking
at the same page.

20

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23

All right, sir. So, the fact that you
may not remember seeing it, although I think perhaps
this was the one that was shown to you, it suggests
to me that you haven't really had a great opportunity
to sit down and digest this particular study.

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A. No.

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Q. Am I correct

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that prior to coming here to testify you really haven't been involved with this Commission or this particular case since your work was completed back in the early part of this year, is that right?

7

A. That's right.

8

9

Q. All right. So, you saw the results of this study then on Monday of this week or Sunday perhaps.

10

11

A. Yes. I know that I found out about this gutter blood study just a few days ago. Yes, Monday, I arrived here on Sunday, so...

12

13

Q. All right.

14

15

A. It must have been Monday or Tuesday.

16

Q. Fine.

17

18

A. And if I was shown this it must have been by Mr. Lamek or your staff there. I don't remember exactly who showed me.

19

20

MR. LAMEK: I showed you that sheet, yes.

21

22

THE WITNESS: Yes, okay. So, I was shown this sheet.

23

24

25

Q. All right. No, I wasn't suggesting



1
2 you weren't, I didn't want to take that away from you.
3 What I am suggesting, sir, is that really you haven't
4 had the opportunity to this point in time to make
5 yourself fully aware of what this particular study
6 was all about or the views of the people who participated
7 in it.

8 A. That is correct. I had heard
9 about the study earlier, as I indicated, and I had
10 an idea of what the study was about, but I haven't
11 heard about any conclusions or results or data that
12 were obtained from the study except, you know, for this
13 sheet that was shown me.

14 Q. Yes. Then may I take it that
15 it would certainly be something that you would prefer
16 to do, is to become aware totally with respect to any
17 study that you are asked to comment upon before you
18 are asked to do so.

19 A. Well, I certainly felt that
20 I had enough information to make a comment regarding
21 the source of that one blood specimen because I knew
22 that this was one specimen in which a comparison had
23 been made with other bloods and where a high reading
24 was obtained. I had an approximate idea of other
25 comparisons that had been made and that this had
never happened except in this one particular instance.



1
2 But that to me is enough.

3 Q. If I could just stop you
4 there, sir. This study as you have just indicated had
5 a significant impact on your position or your opinion
6 with respect to Baby Estrella.

7 A. Right.

8 Q. To the point where you
9 reduced that to one of really a low index of
10 suspicion.

11 A. Yes.

12 Q. I take it that the reason that
13 you reduced your index of suspicion with respect to
14 Estrella is because of the fact that one sample in
15 this particular study reflected a very dramatic
16 increase in the level of digoxin in fluid from the
17 pelvic cavity over and above blood from the heart
18 and sagital sinus.

19 A. Right.
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Q. Now, have you had an opportunity to talk to Mr. Cimbura with respect to this particular study?

A. No, I have not.

Q. In preparing to give your evidence here, were you made aware of what Mr. Cimbura said to this Commission about the study?

A. I don't remember. I believe that he also felt that less significance should be placed upon this sample, the Estrella sample, because of this gutter blood finding, but I am not quite certain about that anymore.

Q. Well, I think perhaps to isolate this particular sample, I think Mr. Cimbura's evidence was that with the exception of Case No. 5 on that list, that all of the other concentrations did not exceed the values found in post mortem blood of infants who were on digoxin therapy.

A. Right.

Q. So, would you agree with that?

A. I don't know if I can agree with it because I am not that familiar with it.

Q. This may be something you would have to spend some time looking at the study and the results of it before you would want to express an



Hastreiter
ex. (Hunt)

1
HH2 2 opinion.

3 A. Yes.

4 Q. With respect to this particular
5 sample, I just put to you what Mr. Cimbura's evidence
6 was here, and this is in Volume 52, Mr. Commissioner,
7 at page 1697 through to 1698, and he was being
8 examined on this by Mr. Lamek, line 4:

9 "Q. Well, can we say anything more
10 than this, Mr. Cimbura, that Sample
11 No. 5 or Case No. 5 at least indicates
12 that blood from the pelvic cavity
13 may yield a very high level which is
14 not consistent with the levels found
15 in blood elsewhere in the body?"

16 "A. That is correct, sir."

17 "Q. All right."

18 "A. And since it is only one out
19 of 14 I would say it may with low
20 level - small possibility."

21 "Q. A small possibility that it may?"

22 "A. That is correct."

23 "Q. Now, we know that the Estrella
24 level of 72 was obtained from a sample
25 drawn from the pelvic cavity. In
light of your research and the numbers
that are produced on this document,



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would you as a toxicologist, dismiss the 72 level as meaningless in light of the source from which it came?"

"A. No, I would not dismiss it entirely, no."

"Q. I take it though, in light of Case No. 5, you could not place total confidence in it?"

"A. I could not place as much confidence in it as if the blood had been drawn from an intact vein."

"Q. Thank you."

Mr. Cimbura has indicated that you are quite right, he would not place as much confidence in this sample as if it had been drawn from an intact vein; but his evidence also was that inasmuch as this was one out of 14, there is a small possibility that blood from the pelvic cavity may yield a level which is not consistent with levels found elsewhere in the body.

Now you have already indicated I think to the Commissioner that in your opinion Mr. Cimbura was a very cautious man.

A. Right.

Q. And he acted with best regard



HH4

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2 to even small possibilities that existed in giving
3 his opinion.

4 A. Right.

5 Q. Now, sir, inasmuch as -- I take
6 it it would be helpful to you to know what the people
7 involved in the study had to say about the impact it
8 had on them, is that fair?

9 A. Yes, it would be.

10 Q. So it is really almost
11 essential to be fully informed about the opinions of
12 those most closely connected with it, would you
13 agree with me?

14 A. I think it is more important
15 to be informed about the study itself, but I think
16 the opinions would help too.

17 Q. Now essentially what we have
18 heard is Dr. Taylor saying to this Commission, not-
19 withstanding his evidence at the preliminary hearing,
20 that there was a possibility the sample may have been
21 contaminated by fecal matter or urine; and we have
22 one case in the gutter blood study out of 14
23 that revealed an elevated level.

24 My suggestion to you, sir, is, bearing
25 in mind the fact that you really have not had an
opportunity to consider the full impact of this study,



HH5

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2 is that really sufficient material on which to
3 completely alter the well thought out opinion that
4 you had with respect to the Estrella case?

5 A. Well, perhaps I should look at
6 my evidence on the Estrella case, because I don't
7 believe I completely altered it. I did not discard
8 this sample completely. I indicated that the index
9 of suspicion is considerably lower.

10 Q. Yes, sir. Just to have it
11 in front of you, yesterday in Volume 76, Mr. Commis-
12 sioner, at page 6710, after my friend Mr. Lamek put
13 to you the summary of the gutter blood study at line
14 12, you were asked the question:

15 "In light of that, do you now believe
16 that you can properly and confidently
17 rely upon the 72 nanogram level as a
18 basis for an opinion that Janice
19 Estrella died of digoxin intoxication
20 resulting from an overdose?"

21 "A. I think it has weakened the
22 case considerably and I don't believe
23 that one can rely on this sample
24 very strongly. I don't think one
25 should completely eliminate it, but
the index of suspicion becomes much



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lower now."

"Q. Are you suggesting that your index of suspicion may not be reduced entirely to the level that it would be on the basis of the clinical picture alone, but probably not very much above that?"

"A. Right, I would say so."

Now then you, sir, elaborated on that to an extent later in the day, and this is at page 6726, again dealing with Janice Estrella my friend asked you at line 5:

"What probably in your best judgment caused this child's death?"

"A. May I first say a word about the gutter blood again?"

"Q. Yes, of course."

"A. I am a little bit concerned about the fact that we only have one specimen of gutter blood that has really a very high level. A level above 100. All the others have levels which are below 15 I believe or certainly below 20, and are comparable - at least not very far



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from the levels of the heart blood.

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So this concerns me a little bit, and I believe that further research really will be necessary to validate the fact that this gutter blood can be so out of proportion with the heart blood as far as the content of digoxin is concerned.

However, I do feel that the value of this sample has been reduced significantly, and in my opinion as I said earlier, this child had good medical reasons to die, and the blood level was really our major evidence for digoxin toxicity, so my present opinion will be that I would have a very low index of suspicion still of the possibility of an overdose. I would not completely eliminate this hypothesis, but I would feel that most likely death was caused by her original disease."

And that to the best of my ability is the evidence that you gave yesterday.



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Now, if I am being unfair in summarizing that by way of suggesting to you that you really have completely altered your view with respect to this case because of the gutter blood study then correct me.

A. I don't think I have completely altered my view. I think that this case was a situation of a baby who was very, very sick, as I explained yesterday. She was expected to die; eventually died, and this high blood level or high digoxin concentration was found in this one sample and this is what led us to call this a case of probable or very likely overdose; it was this one sample.

Now the reliability of this sample now has been questioned because of the work on the gutter blood. This information, of course, was not available at the time of the preliminary inquiry, and I think in all fairness the whole question here evolves about whether -- how reliable the sample is, how much emphasis should be placed on this sample or credit.

In my opinion the significance of the sample has been reduced considerably. I haven't thrown it out completely, but since this is our main piece of evidence for overdose, the only piece of



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evidence for overdose really that the clinical course did not help very much. I think that this is what I did, I changed my rating of this case from a very high level of suspicion to a low level of suspicion.

Q. Very low level.

A. This is a method of, you know, quantitation which is so difficult to do on the basis of one sample.

Q. Sir, I appreciate that and I am not trying to -- I am not trying to argue with you, to get into an argument with you, because I can appreciate the circumstances under which you had to give your opinion, being notified of the results of the study just before you testified, and not really having an opportunity to consider the whole impact of it, and I suggest that is not the ideal situation and I think you would agree with that.

A. Could you repeat that?

Q. I suggest, sir, that having to give your opinion with respect to Baby Estrella and digest the impact of this study without an opportunity to fully consider it and discuss it with the people involved, what their impressions were, is not an ideal situation.

A. Yes. I would say it would have



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2 been helpful to have had the opportunity to discuss it.

3 MR. HUNT: Mr. Commissioner, I am not
4 being critical of Mr. Lamek or Miss Cronk because I
5 appreciate there are distance problems and time
6 problems.

7 Q. With respect to this, inasmuch
8 as it is not the ideal situation, sir, are we really
9 left with the fact that your opinion is changed
10 based on Dr. Taylor's now statement that there was a
11 possibility that the sample was contaminated with
12 fecal matter or urine; and in addition to that
13 possibility the fact that one case on a study done
14 by Mr. Cimbura in the Hospital reflected an extremely
15 elevated level?

16 A. Yes. If I had known about
17 the contamination of the sample with fecal material
18 at the time of the preliminary inquiry I would have
19 been very concerned about this sample.
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Of course, I didn't know then about the other study,
the gutter blood study.

Q. And you can't be faulted for
that. You couldn't have known about the fecal material
because none of us knew about it until Dr. Taylor ---

A. That is right.

Q. -- came before this commission
and testified a year and a half later.

A. But now we find out that there
is a possibility, one out of 15 or 14, that this type
of blood may be artificially, very, very high. And
not only that, but the person who performed the study,
Mr. Cimbura, in his testimony indicated that he
was now concerned himself about the reliability of
that one sample, and that he himself had lowered --
in his mind the significance of that sample had
been lowered.

I think I have to more or less agree
with him.

It is possible that in the future
further studies will show that, no, this was just an
error; that such a sample was just a freak accident
something, and perhaps will never happen again. I
don't know.

Q. Right.



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A. But for the time being I

think if it ever happens, then how can we, you know,
justify making an important decision such as this
on the basis of one sample of which we don't know the
value, really.

Q. All right. Just so that you are

not under any misapprehension, I have perceived
the difference between the significance that Mr.

Cimbura attached to Page No. 5 and the significance

that you attach to it, and I don't think the two can
really be equated.

Mr. Cimbura said at Page 1697 in

Volume 52 that as far as he was concerned the case

No. 5 indicates a small possibility, small possibility,

inasmuch as it was only one of 14 in the study;

that blood from the pelvic cavity may yield a very

high level inconsistent with blood from other

places in the body.

So that it may be that you would prefer

to agree with Mr. Cimbura with respect to the possibility

that it may yield a higher level and rate that as

small. I don't know. I appreciate you didn't

know about Mr. Cimbura's evidence until today.

A. Well, I will not change my

opinion.



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2 I think that if there is any possibility
3 that this sample was an artefact of some kind, the
4 value of that particular sample, the significance
5 of that sample has been reduced.

6 Q. All right.

7 A. Considerably.

8 Q. And that, sir, may just be
9 a reflection of the caution that you yourself bring
10 to the judgments that you have to make in this matter,
11 but so that we have it clear the possibility that
12 you act on in reclassifying Baby Estrella is
13 Dr. Taylor's present evidence that it was possible
14 that fecal material or urine got into the pelvic
15 cavity, and the possibility, however small, as shown
16 by the one case in fourteen pelvic blood may yield
17 a higher level than blood taken elsewhere in the
18 body.

19 A. That is correct.

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Q. All right.

THE COMMISSIONER: Can we leave that?

MR. HUNT: Would this be an appropriate
time to --

THE COMMISSIONER: Yes. I was
waiting for a pause in that particular line of
questioning, so I think we will rise now then until
ten o'clock tomorrow.

Yes, Mr. Tobias?

MR. TOBIAS: It might be helpful at
this point if we could get an indication from the
counsel.

THE COMMISSIONER: All right.

Mr. Hunt?

MR. HUNT: Not very much longer, Mr.
Commissioner.

THE COMMISSIONER: All right.

MR. TOBIAS: I am happy you committed
yourself so definitively.

MR. HUNT: Well, if the Commissioner
ties us to the times --

THE COMMISSIONER: No, I am not going
to tie you to the times in this case because Dr.
Hastreiter is coming back next week so it is not a
problem.



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I think really what Mr. Tobias wants to know is whether he can go out on the town tonight.

MR. TOBIAS: That is precisely what I had in mind.

MR. HUNT: I don't think whatever I say would stop him, Mr. Commissioner.

THE COMMISSIONER: All right.

Mr. Young, how long will you be?

MR. YOUNG: Thanks to Mr. Hunt's comprehensive cross-examination I don't expect to be any more than ten or fifteen minutes.

THE COMMISSIONER: All right.

Miss McIntyre?

MS. MCINTYRE: I am quite honestly not sure but I don't think I will be very long.

THE COMMISSIONER: I don't know what I am to take of that.

MS. JACKMAN: I don't think I would be more than half an hour.

THE COMMISSIONER: Mr. Olah.

MR. OLAH: I am always pleased to help out Mr. Scott so I will be quite a bit longer than Miss Jackman. I would expect to be about an hour.

THE COMMISSIONER: I think that certainly covers the morning anyway, and then we are



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rising about twenty to four in the afternoon.

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MR. TOBIAS: We are also supposed to
hear from Miss Forster and Mr. Brown.

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THE COMMISSIONER: Yes. I had
forgotten all about you.

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Now how long do you think you will be?

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MS. FORSTER: Half an hour to an
hour, sir.

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THE COMMISSIONER: Mr. Brown?

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MR. BROWN: About half an hour.

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THE COMMISSIONER: I think you are
probably safe but I don't make any promises.

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MR. TOBIAS: All right, thank you,
Mr. Commissioner.

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--- whereupon the hearing was adjourned at 4:50 p.m.
until Thursday, the 8th day of December 1983, at
10:00 a.m.

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